THE BRICKBUILDER.

VOL. 13 OCTOBER 1904 NO. 10

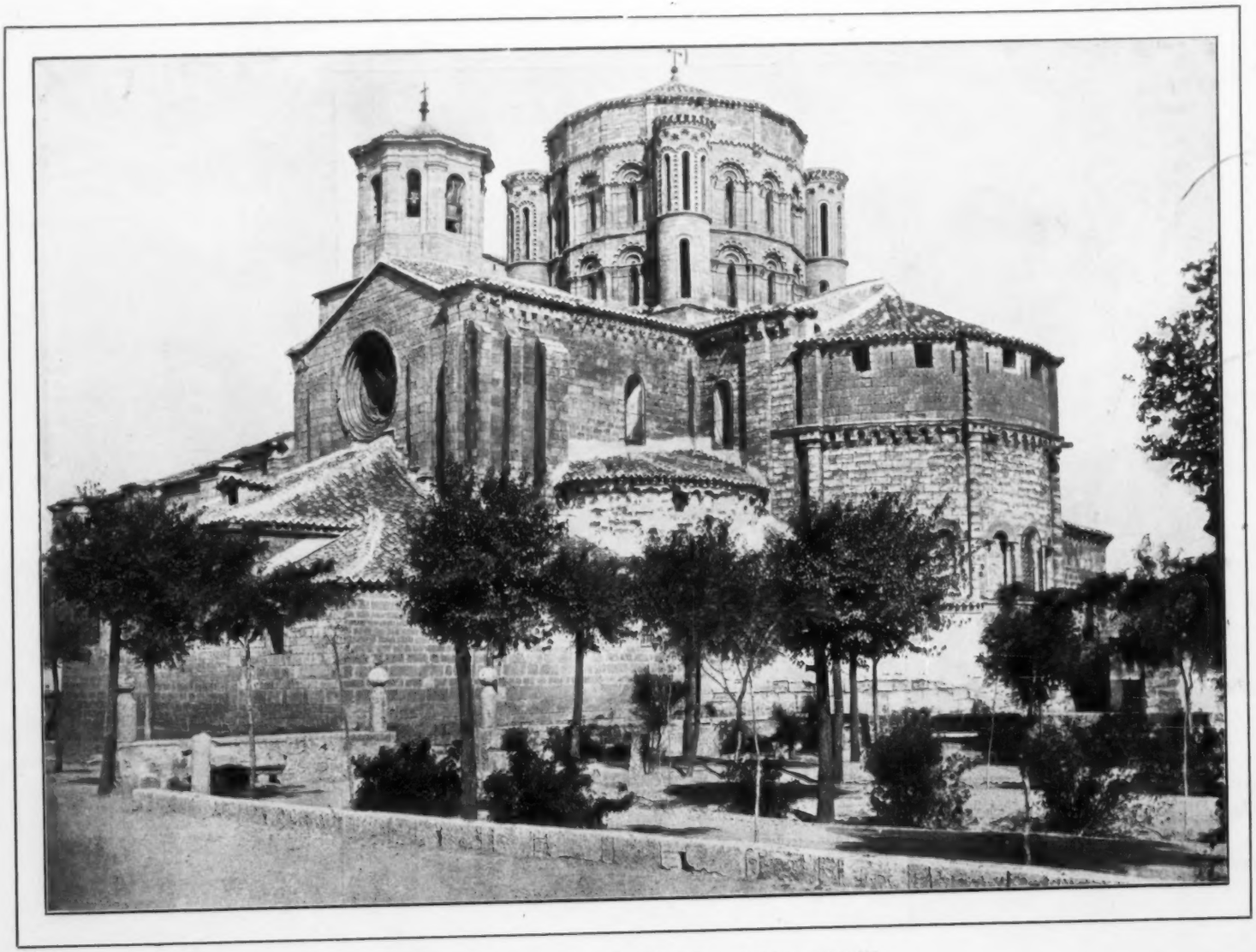
CONTENTS — PLATES

FROM WORK OF ALLEN, COLLINS & BERRY, BEEZER BROTHERS, GREEN & WICKS, PEABODY & STEARNS, WINSLOW & BIGELOW.

CONTENTS — LETTER PRESS

PAGE

CHURCH OF THE COLLEGIATA, TORO, SPAIN ..... Frontispiece
EDITORIALS 199
SOME MINOR DOMESTIC ENGLISH BRICKWORK. II ..... *Frank Chouteau Brown* 200
BRICKWORK ON THE PACIFIC SLOPE. II ..... *Charles Peter Weeks* 205
TOWN HALLS IN ENGLAND. I 207
CONCRETE STEEL CONSTRUCTION ..... *William Copeland Furber* 211
ENDURANCE OF PORTLAND CEMENT 212
EDITORIAL COMMENT AND SELECTED MISCELLANY 213



CHURCH OF THE COLLEGIATA, TORO, SPAIN.

THE BRICKBVILDER

VOL. 13 No. 10 — DEVOTED · TO · THE · INTERESTS · OF ARCHITECTVRE · IN · MATERIALS · OF · CLAY — OCTOBER 1904

THE BRICKBUILDER.

PUBLISHED MONTHLY BY

ROGERS & MANSON,

85 Water Street, Boston, Mass. . . P. O. Box 3282

Entered at the Boston, Mass., Post Office as Second Class Mail Matter, March 12, 1892.

COPYRIGHT, 1893, BY THE BRICKBUILDER PUBLISHING COMPANY.

Subscription price, mailed flat to subscribers in the United States and Canada . . . . . $5.00 per year
Single numbers . . . . . 50 cents
To countries in the Postal Union . . . . . $6.00 per year

SUBSCRIPTIONS PAYABLE IN ADVANCE.

For sale by all newsdealers in the United States and Canada. Trade supplied by the American News Company and its branches.

THE COMPETITION FOR A VILLAGE CHURCH.

WE wish to call attention to this particular competition in order to note its bearing on several matters not elaborated in detail in the programme.

The policy of this journal has been to direct attention through its competitions to the great possibilities of burnt clay products, and to interest as many architects and draughtsmen as possible in the adaptation of design to the requirements of this particular material. At the same time these competitions are intended to be something more than this. They are intended to place before the younger members of the profession, problems with which they would naturally be confronted under conditions that might actually exist. THE BRICKBUILDER desires that while primary consideration must, of course, be given to the development of design adapted to the uses of burnt clay in all its forms, the designs submitted in the several competitions should be as well essays in constructive design abstractly considered.

That is, whatever the problem, the competitors should consider that they are not merely popularizing a particular form of building material, but that they are contributing to the development of architectural design on the most logical lines of which they are capable. In the present competition, for instance, that for a Village Church, the subject is one which is constantly coming before architects. The question of the development of a proper style for ecclesiastical architecture in this country is one of great importance. The competitors have behind them all the history and tradition of Christianity, all the local and climatic influences developing from conditions in this country, and all the new, and in some cases unprecedented, elements derived from the motives of twentieth century construction. The prizes given in these competitions are surely liberal, and should act as inducement to all competitors to study the problems in the broadest possible way.

Neither in this present competition nor any of the others will the judges be drawn from any one school of architecture, but every effort will be made to have the Board thoroughly representative of American architecture in all its aspects.

ALTERATION OF SECOND-CLASS BUILDINGS.

A DECISION was recently made by the Boston Board of Appeals which affects very materially a number of prominent buildings erected prior to the passage of the laws forbidding anything but first-class fireproof constructions for buildings over seventy feet in height. Application has been made to alter one such structure actually over ninety feet in height, the proposed alterations including a number of ordinary wooden stud partitions in the first story. This application was rejected by the Building Commission under an interpretation of the building law which provides that "any alteration in a structure shall conform to the provisions of this act for a new structure," claiming that as the law requires all new buildings over seventy feet high to be fireproof, therefore alterations of this ninety-foot building must be fireproof. The Board of Appeals, to whom the question was referred, decided against the commission and ordered the permit to be issued, taking the ground, it is understood, that the law as it stands does not intend to deprive a property owner of any of his rights nor to compel him even in part to transform an existing second-class building into a first-class one, even though such a second-class building could not now be erected under existing laws. To rightly express, therefore, the import of this decision the law should read, "Any alteration . . . shall conform to the provisions of this act for a new structure of the same class as the structure to be altered, irrespective of whether or no said structure otherwise complies with all the terms of the existing law."

It will be seen at once that this decision very materially affects the fire risks of the business district in which are many second-class structures over seventy feet in height.

Some Minor Domestic English Brickwork. II.

(*Continued from page 190.*)

BY FRANK CHOUTEAU BROWN.

OF either the "Classic" or the "Gothic" type of house there would naturally be two main divisions, those built essentially for town dwellings and generally abutting directly upon the streets, or those intended to be set in a surrounding of parks, foliage or other natural accessories. These latter may be situated either in a small town, retired behind walls and fences, or isolated upon the country side.

GATEWAY AND HOUSE, SALISBURY CLOSE.

HOUSE AND FENCE, SALISBURY CLOSE.

GATEWAY AND HOUSE, SALISBURY CLOSE.

Several of the city type of classic houses are among the photographs taken in Lincoln. The group of three houses on the north side of the square, extending from the Bailgate to the Castle gateway, are worthy of reproduction, and the illustration shows the central building of this group along with portions of the two adjoining structures. The one at the left of the picture reaches almost to the Castle gate and is much the more pretentious in size, and dignified and reserved in appearance. The ornamented pediment with elaborate entrance, and the two niches for statues, along with the large and tall window openings, all indicate the formal intention of the residence.

Upon the other side of this group is a simpler and earlier plaster city dwelling supposed to date from the time of Henry the Seventh, of which a glimpse is given in the same illustration. Between these two is a double house occupying the center of the picture, a house that is much more "citified" in type than would be expected in these surroundings and in a city of Lincoln's straggling formation. Here the stone quoins and balusters give something more of life and color to the building, while in its entire treatment of brick and stonework it is less formal and stiff than its neighbor. The two simple doorways are also in keeping with the general aspect of the house and do much to add to the charm of the whole.

The old house in Derby shows a later and more pretentious town dwelling, in this case set within a small yard or forecourt and separated from the street by a somewhat elaborate brick fence and gateway. This building is now used by the Baptists for a chapel, and the interior of the house has been so much rearranged that its interest is slight, but the exterior still conveys a more or less appropriate effect of primness and restraint that is, architecturally, perhaps too cold and inflexible,—both almost invariable attributes of so formal and fixed a classical composition as this.

SCHOOL, SALISBURY CLOSE.

BRICK HOUSES, SALISBURY CLOSE.

SCHOOL, SALISBURY CLOSE.

It is doubtful if the stiff academic pilaster treatment of such a building can result in anything other than a rather stilted and unpleasing composition. Except in the hands of a master, one familiar and instinct with an intuitive knowledge of the proportions of classic architectural forms, a combination so elaborate cannot fail but disclose something of the study and labor required in its production, and this feeling alone, when evident, must

always somewhat detract from the pleasure given by any artistic production.

The fence and gateways are rather more interesting, and taken along with the ironwork of the driveway and the planting of the restricted lot of land enclosed in the forecourt of the building, with its two tall poplar trees emphasizing the architectural treatment of fence and house and adding impressiveness to the gateway itself, it may be considered as a more felicitous and pleasing accomplishment than the house.

BRICK HOUSE, SALISBURY CLOSE.

STONE HOUSE, SALISBURY CLOSE.

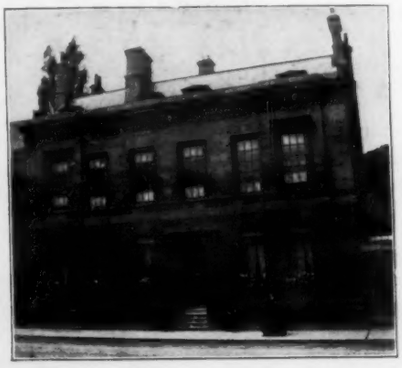
STABLE, SALISBURY CLOSE.

Interesting as is the English brick city-built house, it does not compare in artistic value with the many and more beautiful dwellings that abound throughout the country and in the smaller villages. For obvious reasons it is much easier to study this type of domestic dwelling in the smaller cities than in the country. Not only may they there be found in greater numbers and in an almost equal charm of setting and environment, but as a rule they are of a type more interesting to the American architect because they are direct in their application to the problems which he has continually to solve. The unrestricted country residence is too likely to run unduly large in size and rambling in plan. It becomes more the mansion, and less a merger of the smaller manor house and the farm cottage, a process that has produced a type of the utmost charm.

There are certain portions of England where the entire mass of buildings, from the humblest cottage to the most ornate church, mansion or castle, are built of stone; a material that happens from its local production to be both the most available and least expensive. Many buildings there are too where the original simple brickwork has been painted over many times, as in the cottages in Greetwell Gate at Lincoln; or, as frequently happens, used as a ground on which to put a smooth exterior coating of plaster or cement, as in the old plastered house at Peterboro, so that all their possible interests of texture and color have been lost. Such a one, for instance, is the Golden Lion at Peterboro, an old inn near the river that has been graced (?) by a smooth false front that, however lacking in texture and color, is yet entirely unable to dispose of the lines and composition of the original mass.

It is a much too prevalent modern architectural fault to give an undue importance to the center line or principal axis of a building in order to produce an absolute "balance" of façade. In English buildings of the type that has just been discussed there is never felt any striving for the establishment of a center line, either in plan or elevation, and, what is even more remarkable, its absence is never felt. The Inn at Peterboro (illustrated in Part I of this article) is a good illustration of a building where it has not been thought necessary to establish any center line and yet where its absence is not even remarked. It will probably require several glances, for instance, to notice that not only is the doorway not in the center of

BUILDING IN BOTANICAL GARDENS, OXFORD, FROM HIGH STREET.



HOUSE, OXFORD.

BUILDING IN BOTANICAL GARDENS, OXFORD, FROM THE GARDEN.

this building, but that, as a matter of fact, there are an even number of window openings across its front, and that this doorway occurs directly under one of the perpendicular lines given by the third of a set of four windows. If it so happens that the plan works out so that the doorway naturally establishes a center line, it may be consistently emphasized in the treatment of the rest of the structure. If, however, as more frequently happens, this should not be the case, the fact is accepted as a foregone conclusion, and it is utilized in so natural a manner and with such simple good faith that the designer forestalls and disarms any unfavorable criticism.

Even when the façade appears to balance upon an arbitrary center line, it will most frequently be found that this apparent center is not in reality the actual middle of the plan, and that it may even be some distance removed from the exact mathematical center; a discrepancy that is easily and effectively taken up by a slightly varied distance in the spacing of the other openings which break the walls of the building.

There is hardly a town or place in England, even of the smallest importance, that does not contain two or three instances of the good use of brickwork. To take one at random, Boston has several examples of great interest, only one of which, the Grammar School, is here reproduced. This simple brick dwelling, of one story only, is typical of many English schools and taken along with the buildings at Salisbury, afterwards referred to, suggests a type that apparently has never been attempted in America.

Smaller individual instances excepted, there is perhaps no group of domestic dwellings that illustrate more particularly the best of the English urban quality than those clustered around the Close at Salisbury. In this group, to be sure, there are several dwellings actually constructed of stone. In reality this does little more than give to the whole an added charm of variety, as the dwelling itself might be executed as well in brick as in the other material.

In this placing and among these surroundings there is a certain amount of what might be called "unearned increment" in the additional value given to the individual dwellings by their setting. The situation and the cumulative interest of so many varied examples containing throughout a uniform likeness and charm of treatment, a certain amount of which is necessarily lost in showing them in the detached manner necessary in these illustrations, cannot of course be realized except by actually studying the group in its entirety. They are set within a clear open enclosure of the most vivid green English sward, with its uninterrupted expanse only broken by a few trees, above which rises the tall, slender and graceful spire of the cathedral. It must be remembered that Salisbury Cathedral is itself perhaps the most "popular" cathedral in England, and that almost all of this popular element it derives from the incidental and purely adventitious charm loaned it by the openness of its location and by the ideality of its surroundings. This same effect is loaned as well to the houses that are placed on the opposite side of the quiet road that bounds the Close, and when, in addition, the visitor is honored with an ideal day of brilliant sunshine and a clear atmos-

BRICK FENCE, DERBY.

BRICK MANSION, DERBY.

GATEWAY OF MANSION, DERBY.

OLD PLASTER HOUSE, PETERBORO.

BRICK HOUSE, BETWEEN BAILGATE AND CASTLE, LINCOLN.

COTTAGES, GREETWELL GATE, LINCOLN.

GRAMMAR SCHOOL, BOSTON.

phere — a blessing that is indeed rare and to be appreciated in England — it is quite impossible not to be impressed by the details and individual units of the picture, even if in its entirety one cannot help but realize that it is somewhat theatrical.

Little remains to be said about these individual dwellings themselves. Several are more or less well known as examples of the best period of the English Renaissance, while others are so comparatively humble and modest in appearance that they have often even escaped the camera of the illustrator. In the most of these dwellings architecture has been restrained to the simplest kind of brick treatment. The decoration is generally

KING'S PARADE, CAMBRIDGE.

confined to the entrance doorway alone, and that is quite as simple and unostentatious as the atmosphere of each dwelling as well as the group as a whole requires. Occasionally stonework is used on the angles as quoins to strengthen the corners, or as keystones in the center of the brick window arches, or to define a belt course or bound the outline of the building itself; and brick and stone and ironwork are combined in the modest and unpretentious archways and fences that define the lot lines, and include the gardens and yard proper around each dwelling.

The two most important and distinguishing characteristics of this group of dwellings are their good composition and their simplicity, the latter being a quality that requires for its absolute perfection the other more subtile and less easily analyzed trait; but their simplicity is, at least, undeniable. Beginning with the two brick houses on the left of the stone dwelling, what could be more simple than their entire design and treatment; plain brick arches and narrow trim around the windows, entrance doorways that are almost as plain as the window openings, the entire adornment being confined in the one to the simple pediment with a round window breaking its plain surface, and in the other to a plain projecting band of stone acting as a cornice and separating the brick balustrade from the wall surface below? Beyond the stone residence occurs a dwelling placed between the stone house and the simple stable shown more fully in

HIGH STREET, OXFORD.

another illustration, that is almost as simple as the one adjoining the stone structure on the other side.

The other houses are perhaps more pretentious. The residence shown in two illustrations, one from within the yard and the other from without, the latter including the gate and fence posts, possesses a doorway of a design very similar to that used on the stone dwelling just mentioned. Here again we find a plain brick balustrade used with the simplest of molded stone cornices, with keys of the same material placed in the window arches. Even more attractive is the house set well back in the yard and protected from the street by the trees and shrubs that line the inside of the brick and iron fence. Seen

WIDOW'S COLLEGE AND GATE TO HIGH STREET, SALISBURY.

through the simple gateway with its overhead lantern supported on a single graceful curved bar of ironwork, some idea of the real value of the ordinary accessories of the British dwelling may be obtained.

A building of larger size is that with the stone fence posts, with their carved pineapple caps, at the entrance. Larger as is this building in size, it is scarcely more pretentious in its architectural aspect than the other dwellings in the group. Its greater length allows of the simple yet effective treatment made possible by projecting, in plan, the two ends of the building so as to slightly suggest the "E" shape arrangement of the great English manor houses.

Similar in type though slightly more elaborate is the so-called Widow's College that is illustrated, along with the gateway leading from the Close to High Street, in the foregoing illustration. This gateway, itself one of the most picturesque of the units combining to form this group, would be better recalled by its outer façade.

Forming a part of this same group is the stable separately shown, a building that is thoroughly British in its expression of solidity and more than usually artistic in that it meets the requirements of its situation and does not jar as a unit in even so perfect a whole. The two small one-story school buildings are of great importance in adding variety to the group; and as their exterior allows of a freedom of treatment not generally obtainable with the more conventional two-story façade, they are perhaps among the more pleasing individual structures around the Close. Especially interesting is the comparison of these buildings with the one used for a similar purpose in Boston and the well-known but larger and more pretentious brick member of the college group at Winchester, of which the entrance doorway is reproduced in another illustration. This entrance doorway, while slightly more pretentious than those on some of the Winchester dwellings, is, after all, quite as well suited to its purpose, and on the building to which it now belongs is so unobtrusive that its excellent simplicity is there perhaps hardly appreciated.

Often the walls of these English dwellings are so covered by vines and the entire structure is so hidden from the street by shrubs and trees that actually but little architectural significance remains; yet, after all, it is this manner of so partially or wholly hiding the outlines of their buildings that adds so much charm and effect to the English dwelling. Without these natural accessories to break the hard outlines and lead the eye naturally from roof to wall and from the wall to the platform of green on which the structure rests, without this extension of color from the ground up over the sides of the building to firmly unite and blend it to the yard and greenery among which it stands, many dwellings would not be considered worthy of a second glance; but this partial veiling of their exteriors does much to pique the curiosity of the spectator and to lend them more or less of the sentimental interest that any mysterious, incomprehensible or semi-obscured object infallibly possesses for human nature.

It is a far jump from Salisbury and Winchester to Oxford and Cambridge, yet both these old college towns are notable for the interesting brickwork that they contain. While it is rather with the larger and more pretentious buildings of both places that we are familiar, yet it is the less pretentious and most unarchitectural examples of brickwork that line some of these cities' streets with which we are immediately concerned. In merely passing along them, the refinement, simplicity and good composition of the majority of the structures lining the streets are noticeably evident.

The same characteristics that we have found to produce the effect of the dwellings along the Close at Salisbury are again employed with equal happiness in this class of buildings. The trick of projecting three or four courses of brickwork from the face of the wall for cornice or belt course is used again and again. The doorways or store fronts are simple to the extreme of severity. Again it must be allowed that architecture is reduced to its bare essentials, — the proportion and placing of openings, the relation of horizontal and perpendicular lines and outlines, without the least assistance from unstructural ornament in producing the result. Personally unfortunate in efforts to obtain photographs of examples of this unpretentious brick street architecture, the only buildings that I can show in illustration of this point are not of brick material, but, although these individual examples are actually executed in stone, they are exactly similar in design to many others of brick. The section of High Street at Oxford, taken from a point at one side and just before you get to Magdalen College, shows at the right the façade of Queen's and beyond that the front of All Souls College with the spire of Saint Mary's closing the vista at the end of the street. Opposite the front of Queen's and between Queen's and All Souls may be seen several of the simple street façades that have been mentioned. Although some of these have been plastered and painted, their architectural type is the same as if they were constructed of brick. The view of King's Parade at Cambridge, taken from in front of Trinity, shows a more picturesque group of street buildings, though in reality they are of less architectural value, several being of quite recent date, yet one or two display admirably the simplicity of this type of brick street architecture.

There is in Oxford one building that will well repay illustration. It is that placed in the Botanical Gardens on the river bank and across High Street from Magdalen College. This building is shown to good advantage in the illustration from the garden side, while its street façade had to be taken at an unfortunate angle from the top of the parapet of the bridge across the Cherwell.

The front on the street is rather more elaborate than that on the garden, including as it does on the principal story Greek Ionic columns of brick that are, in the illustration, rather indistinct on account both of the shadow lying across the front of the building, and of the vines that have been allowed to overrun the entire structure. From the garden the building shows to better advantage, not only on account of its surroundings but because of the better view point there obtainable.

In Cambridge there are many groups of interesting brick buildings, although here, too, many have been spoiled for our purpose by the application of a plaster or stone facing on their exterior walls. But along the river, especially, some of this old brickwork can still be found. Queens' College is perhaps one of the oldest buildings, and the corner of the courtyard shows a part of the brick arched cloister bearing the famous Long Gallery overhead, with the walls of the College Hall at the right of the illustration. The other brick buildings, such as

DOORWAY, COLLEGE AT WINCHESTER.

St. John's and Magdalene College, are more recent and of less picturesque value. The colleges of Cambridge also abound in interesting gateways, both large and small, although many of these are of stone.

The majority of the illustrations have been taken from the simplest and least pretentious buildings, although there are necessarily included a few well-known architectural examples. Gathered together even as they are in this fragmentary fashion, yet the lesson taught to the American architect by these individual instances of good brick architecture is both unmistakable and direct.

The limitations imposed by the material itself demand a simplicity and severity of treatment that force him to

COURT, QUEENS' COLLEGE, CAMBRIDGE.

abandon the usual frivolities that are so readily available for use on the wooden clapboarded house, and compel the designer to depend upon the good proportions of openings, horizontal courses, roof lines, and the outlines of his building — all integral parts of its problem in design and plan — for his effect. Further, a nice appreciation for brickwork, which gives him without stint both a beautiful texture and a variety of color that are not available in much more expensive building materials, should cause him to lose his individual preferences and do his utmost to discover and search out the technique of treatment lending itself most felicitously to its architectural expression. Almost am I tempted to write "its unarchitectural expression"; for, after all, does not a great deal of the charm of old work occur from the very faults (as we are pleased to call them) both architectural and mathematical, the very inexactness of line and circle, of projection and reveal, of detail and composition, that in our modern present-day work we are at so much pains to foresee and obviate?

Brickwork on the Pacific Slope. II.

(*Continued from page 180.*)

BY CHARLES PETER WEEKS.

SAN FRANCISCO.

THE second article on San Francisco architecture includes buildings of a more public character, but before leaving residences I wish to speak of two that space did not permit of in the first article. One, a dwelling on Jackson Street, Julius Krafft, architect, in a light

HOUSE ON SCOTT STREET.
Sutton & Weeks, Architects.

salmon-colored brick with light terra-cotta trimmings, is especially worthy of notice on account of its pure and simple design. The style followed is that of Louis XVI. It recalls the drawings of Cæsar Daly. The fenestration is good, the decoration in a few simple keystones and brackets is thoughtfully placed, and the light color relieved from monotony by well-designed dark iron balconies. The porch entrance is in keeping with the rest of the design.

The second is a residence on Scott Street, Sutton & Weeks, architects. The brick used here are selected

HOUSE ON JACKSON STREET.
Julius Krafft, Architect.

LITTLE JIM HOSPITAL.
A. C. Schweinfurth, Architect.

clinkers of a rugged texture laid in Flemish bond, the color so selected as to form an invisible pattern over the entire wall, giving it the effect of a rich, simply designed Oriental rug. Dark redwood entablature and brick quoins slightly in relief form a border. The entrance is of gray stone and the roof of slate. It has been necessary here to contend with the usual difficulty of a large house on a small lot. The house is but just completed and lacks the tone of age and joy of vine and flower.

A local characteristic of design is shown in the illustration of a brick entrance. The hillside, the large house and a small lot combine to force the ingenuity of the designer into artistic forms to disguise the long flights of steps and cramped approaches.

The Home for the Aged, by Albert Pissis, architect, just completed, is of the best work in San Francisco. The hospital character is attained by a simple window treatment, and a homelike, inviting appearance is given by the white wooden portico entrance, cornice, dormer windows and belfry. Just enough church character is given by the recall of Colonial Religious Architecture in the belfry. This is one of the few groups of buildings in San Francisco that appears to have been studied by a student of architecture, with all the requirements of the problem in mind and a sense of the beautiful in his heart.

HOME FOR THE AGED.
Albert Pissis, Architect.

The Maria Kip Orphanage hearkens back to old Spanish days for precedent. This structure, by Percy & Hamilton, is in plaster with brick trimmings. The height required has been a great difficulty, but has been very well overcome. The general lines are very good, but the detail lacks that rich lace effect that all Spanish work has. Even the Mission arches have lost by translation. The charm of the old Missions lies in their want of exactitude, their representation of human weakness, in other words. In a series of arches there is always a difference of width, height and radius. The arches in the Maria Kip Orphanage were never done by a lazy half-breed Spanish Indian.

RIDING SCHOOL.
William Curlett, Architect.

The Little Jim Hospital, by A. C. Schweinfurth, is a much better building from the point of view of architectural recall of character. This group of buildings is also of brick and plaster with Spanish tile roof. Too much effort is shown in an attempt at picturesqueness in the jagged brick trim around the windows, but this is the only criticism. The buildings consist of two similar

A TYPICAL ENTRANCE.

groups joined in the rear by a large circular ward and operating room. Two round towers flank the entrance to each group. These entrances are gems of imaginative study; a low, heavily molded archway with richly wrought doors set therein and crowned with a hood of timber and tile. The light yellow color of the walls and dark red of the tile and brick and the green doors and windows form a chord as harmonious in color as the structure is in design, but the pity is the lack of an appropriate setting.

MARIA KIPP ORPHANAGE.
Percy & Hamilton, Architects.

The building is brutally set against the very street. No vista, no atmosphere, no surroundings. How one longs for grass and walks and flower beds, and here and there a tree, in whose shade, on a lounging seat, a white-capped nurse might indicate the character of the place! On the contrary, it all looks so businesslike.

A very recent structure in brick is the building for the San Francisco Riding School. It is built of a variegated colored buff brick laid in light mortar. The ring proper is successfully composed by the long roof terminating in gable ends inspired by Mission details. The long, low character is charming and is an architectural success.

Town Halls in England. I.

IN considering the subject of town halls and municipal buildings it is worth while to recollect the guilds which formed the nucleus of town government. Much of this history is obscure, but we know that they were established generally by the close of the twelfth century, that they became powerful in the thirteenth, and were able to counterbalance the nobles during the fourteenth and fifteenth centuries. It seems certain that they were first religious associations, concerning themselves largely with the burial of their members and in singing masses for their souls; but it was not long before other guilds arose, such as the peace guilds which strove against theft and violence. Afterwards came the merchant guilds and the craft guilds, and out of the latter arose the twelve great companies of London. The fact that of the forty guilds which joined in the repair of Bodmin Church only five were craft guilds shows how diverse their functions had become. In England they were abolished more than

TOWN HALL AT FORDWICH.

a hundred years ago, yet some few relics remain, as the Dean of Guild, who is second municipal magistrate in a Scottish burgh. The first guilds probably met in private houses, but as their power extended they felt the need of a central meeting place and thus arose the guildhall, which we may regard as the simple building from which the modern town hall and municipal buildings have evolved during the lapse of centuries. Another factor in the development was the "tolbooth," originally a booth, a mere roof on wooden posts, at which market tolls were collected. When a room was required as a place of meeting for the "gildmerchant" or town council the easiest way was to build a chamber over the tolbooth, without encroaching on the market place; and when in later times the town hall or guildhall was rebuilt the same arrangement was kept, as we may see at many places in England. The guildhall was, of course, essentially the place where the guilds met to discuss affairs. Examples of these early buildings are to be found in almost every county, as at Laxfield (in Suffolk) or at Stratford-on-Avon, consisting principally of a long room where, no doubt, the members sat at a table extending from one end to the other. Later, with greater needs and the altered form of council — the guilds having lost their power and been succeeded by a body of elected townsmen — a larger hall was required,

with some accommodation for the mayor, the clerk and his assistants. Thus we find things in the seventeenth and eighteenth centuries, during which the requirements continued to increase, and so on to the nineteenth, by which time a large number of rooms had been added to the hall that was once the sole apartment. The requirements of town government still increasing, we find that the town hall proper ceases to exist, being represented by the council chamber in which the councillors and aldermen meet to transact the business of the town, while a surprising number of new offices have sprung into existence, occupying by far the greater part of the site.

A still further development presents itself in the subdivision of some parts of the building. Not infrequently the police court, library, museum and fire station are gathered together with the town hall and municipal offices, forming the chief block in the town, but as demands

CHIMNEY-PIECE IN MAYOR'S PARLOR, GUILDHALL AT LEICESTER.

GUILDHALL AT LEICESTER.

increase all these become separated, and thus in the city of to-day the library and museum form one building, the fire station another, the police and law courts still another, while the actual town hall, used for common purposes of the town, such as concerts, meetings, etc., is represented by a number of places, chiefly under private direction.

As an interesting old example of a brick town hall combining these several now separated offices, I may describe that at Fordwich, near Canterbury. This quaint building has a brick and stone base, with some excellent half-timbering filled in with brickwork on the upper story, the high pitched roof being tiled. On the ground floor is a storehouse and a prison or lockup. A low door opens to a steep stairway by which the council chamber is reached. This is a plain whitewashed room about thirty-one feet by twenty-three feet eight inches, with three windows having oak mullions and lattice casements. The upper part of the room is paneled and is fitted with a narrow bench on which the twelve jurats sat, the mayor's seat being in the center. In front is a table (dating from 1580) on which are the constable's staves and a pair of handcuffs. A heavy beam crosses the room, on which are placed two ancient drums belonging to the old press-gang and still used in the ceremony of beating the bounds of the parish, and a "cucking stool," which was used for ducking scolding wives and other disorderly females in the river, they being afterwards left to dry in a loft over the room.

Mr. Woodruff, in his history of the town, says: "A careful examination of the building now called the town hall leads me to think that it may be a good deal older

TOWN HALL AT WATLINGTON.

TOWN HALL AT WATLINGTON.

than the time of Philip and Mary (1527 to 1598) and may indeed be the identical 'Common House' to which extensive repairs were done in the year 1474. It was probably again repaired in Tudor times and certainly at the Restoration. The last refurbishing was done in the year 1874, and it is to be hoped that whatever may be done in the future towards maintaining the time-worn fabric will be done in a reverent and conservative spirit, for it occupies a position amongst municipal buildings which is probably unique."

Another old town hall is to be found at Boston in Lincolnshire, which has been a corporate town since the time of Henry VIII. The old town hall, or guildhall, belonged to the Guild of the Blessed Mary, founded in Boston in 1260. The building is no longer used as the official town hall, having been ceded by the corporation to the Charity Trustees. It is now used for public meetings, examinations, dancing, etc., the official business of the town being conducted in the new municipal buildings completed this year. The exact date of the building is doubtful, but it appears to have been originally built in the sixteenth century, though later alterations are clearly shown by sash windows and other details.

The town hall or market house at Watlington, near Oxford, is another interesting building. It was erected in 1664, and is one of the many with arches on the ground floor, forming a covered market, over which is the town hall proper. This is a very common type. In 1682 Preston is described as having in the center of the market place "an ample and well-beautifyed gylde hall," under which were ranged "two rows of shops, and here, once a week, was a market for linen cloth, yarn, fish and general agricultural produce, as well as cattle, sheep and pigs."

Another town hall of this type is at Amersham, in Buckinghamshire. The town of Amersham is most interesting and picturesque, but very different to what it was — as many as eighty coaches passed through it daily, before the introduction of railways. It is worth noting

TOWN HALL AT AMERSHAM.

that from a house and garden in the town Dickens took his description of Miss Hardcastle's residence, in "Great Expectations." It is also said that Sarah Gamp was taken from an old character at Coleshill, about one and one-half miles away.

Many of the old town halls have a large clock overhanging the street; that at Guildford, in Surrey, is an excellent example.

At Leicester there is a very old guildhall possessing many interesting features. It is a small building with an open roof of rough-hewn timbers and a range of windows similar in character and arrangement to most of the earlier halls of the mediæval guilds. It belonged to the Guild of Corpus Christi before it was purchased by the corporation, and though said to have been originally built in 1350, the existing building appears from all accounts to have been

TOWN HALL AT POOLE.

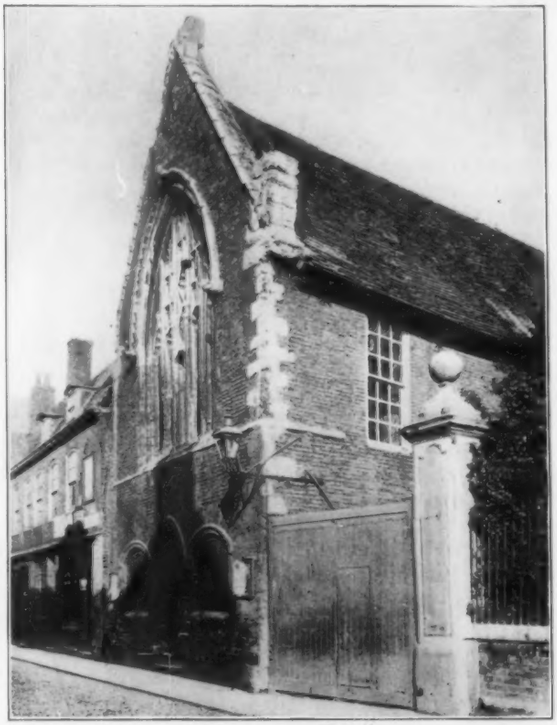
TOWN HALL AT ROCHESTER.

erected in the reign of Queen Elizabeth, having been first opened by a banquet given by the mayor to commemorate the victory over the Armada. The mayor's parlor is a fine old paneled room with a magnificent chimney-piece and fragments of some beautiful and probably very old yellow stained glass in the windows.

Rochester town hall is another old place. It was first erected in 1687, a brick structure supported on coupled columns of stone in the Doric order; the hall on the first floor, to which access is given by a spacious staircase, measures forty-seven feet by twenty-eight feet, and has a curiously ornamented ceiling; it is enriched with trophies of war, as well as the arms of the city and of Sir Cloudsley Shovel, at whose expense it was done in 1695.

TOWN HALL AT GUILFORD.

We now come to the eighteenth century. By that time town halls had grown larger. That at Poole, in Dorset, is a good example of the period. It stands in the market place and was erected in 1761 at a cost of $7,500. The building is of brick with Portland stone dressings, and comprises on the ground floor a meat market formed by a series of arcades (little used now), a committee room, strong-room, etc. Above, on the first floor, is the town hall. The main entrance to this room is by a double flight of outside steps leading to a large pedimented portico at the west end. Above is a striking clock. The council chamber is also on the first floor. The hall is used for quarter sessions, county court, police court, council meetings and for public functions, etc. Rooms for juries, etc., are provided on the floor above. The bell in the cupola was originally used for the curfew, which is still rung at eight P. M. and also at 6 A. M. throughout the year. This town hall is very typical of the buildings erected in the late eighteenth and early nineteenth century. Their design and arrangement are very much the same in different parts of England.



TOWN HALL AT BOSTON.

The development through the Victorian era and the consideration of some notable town halls erected within the last decade will comprise the second article.

Concrete-Steel Construction.

BY WILLIAM COPELAND FURBER, M. AM. SOC. C. E.

THE numerous schemes of concrete-steel construction now upon the market vary in many ways, some only in the minor details of arrangements and some in principles of construction.

Their advocates are so confident of what they say that one needs to be surely grounded on the true principles of construction to prevent being carried away with their enthusiasm. They will point out that many buildings are being constructed in this new way, and that floors, walls, columns, girders and beams are now being successfully built with concrete and steel. They present some elaborate and formidable calculations and figures to reinforce their statements, which are very interesting and instructive and sometimes impressive.

The technical press is also full of the discussions of the characteristics, qualities and tests of this modern development, and in order to keep in touch with the new facts developing every day one needs to devote considerable of his time to reading and study.

Finally, the conscientious architect should be able to make his own calculations and do his own thinking if he has a proper sense of professional responsibility, and after he has fully studied all the available facts, he must ask himself, if he were building for himself, as an investment, if he would use this new combination, as its advocates would have him.

He should weigh carefully all the advantages claimed for the new material and then consider all its disadvantages. He should consider that concrete beams and girders are usually designed to provide for uniformly distributed loads or concentrated loads symmetrically placed, and not for concentrated loads unsymmetrically placed or for loads that cause a reversal of stress.

He should also remember that steel beams or girders are usually of such section that any section of the beam is as strong as that at the point of maximum stress, and where this is not the case the minimum section of the beams is at least of sufficient section to take a temporary overload.

In the construction of columns he should remember that the loads on columns are frequently, and in columns of two or more stories high almost invariably, eccentrically loaded, and that this eccentric loading produces bending stresses, and that these bending stresses must be provided for in the section of the columns, which can readily be done in the steel column, but not so readily in the concrete columns.

Columns are also likely to have bending stresses, caused by accidental means, during construction, such as serving as posts for derricks or anchors for guy lines and afterwards by such eccentric loads as shafting, etc., which a metallic column can resist without difficulty, but which may affect a concrete column seriously.

In the question of adhesion of the concrete to the steel some recent writers have asserted that the cementing substance between the steel and the concrete was a silicate of iron which was soluble, and that by immersion in water this silicate could be dissolved out and the bond or adhesion destroyed.

This fault is claimed to be overcome by the use of corrugated or twisted rods or other shapes, which offer greater resistance to pulling out than smooth bars; but it is necessary to bear in mind that theoretically the composite structure or section is regarded as a unit, and that when separation takes place from any cause the two materials can no longer be regarded as one, nor subject to the same laws as those that govern a homogeneous material.

From a mechanical point of view the separation of the material means the first step towards disintegration and wear, opens the way for the possible penetration of water, gases and acids to affect the metallic reinforcement.

In considering the various stresses which may come upon a girder or beam other than that which it is usually designed to bear, it should be remembered that various conditions of loading, which may not affect seriously a beam of wood or steel with a uniform section, may so change the stresses in a concrete steel beam designed for a uniformly distributed load that it would not only be unsafe but in danger of destruction.

Another form of stress which is not considered in ordinary calculations, but which a steel or wood beam is usually capable of resisting, is a lateral thrust which may possibly come on the floor system from external sources, such as shafting, or from accidental causes which might arise from various sources, such as fires, etc., which the concrete steel has no provision to resist, Buildings are not infrequently designed for one purpose and are afterwards used for another, and the concrete form of beams presents great difficulty in making any changes or providing for strengthening the floor system.

Another great difficulty in the use of concrete steel and one which calls for the greatest caution is the element of workmanship. In no part of building construction does the workmanship factor exercise such an important influence. Poor workmanship in mixing the concrete, or carelessness in handling and placing the mixed material, requires the most extraordinary vigilance to guard against, for a bad batch or insufficient tamping at a critical point may cause a serious and possibly fatal failure of the structure.

The danger of the weather affecting the work before its final set is very great. The complete crystallization of cement requires about ten per cent of water, which is chemically combined with the cement. If this water is evaporated or the concrete is deprived in any way of this amount of water, complete crystallization cannot take place, and the full strength of the cement cannot be obtained. It is a difficult, if not an impossible task to educate the careless workmen out of the belief that the *drying* of the cement and the *setting* of the cement are not one and the same thing. Few workmen seem able to comprehend that Portland cement can and does set under water, and this very ignorance on their part is a great factor in bad workmanship, and tends toward poor and unsafe construction.

One of the principal reasons why concrete work is cheaper than some other forms of construction is because of the employment of unskilled labor, and this very reason is apt to be its undoing. The labor unions have reduced the quality of skilled labor to almost a negligible

quantity, so that it is but little better than the unskilled, but it is some advantage to have men who have done the same kind of work before. In the unskilled class, where the laborers in a concrete gang are often changing from day to day and few men continue in the same line of work for any great length of time, it is useless to expect either efficiency or good work.

The fireproof qualities of concrete are a matter about which there is great dispute, and the final word will probably not be said until the tongues have ceased to wag, but the very fact that concrete requires water incorporated into it to permit it to crystallize is also a fact which prevents concrete from ever being seriously considered as a truly fireproof material.

Volumes may be written and series of tests may be published which may appear to establish the resistance of concrete to fire, but every chemist knows that the chemical laws cannot be evaded, and that anything containing water in any form can be made to yield it up by the application of sufficient heat. The real reason why concrete slabs or floors have shown such results as they have is because the cinder concrete is itself a very slow conductor of heat, and that while the surface may be disintegrated in a fire of short duration, the interior is not affected. If, however, the fire is continued for a sufficient length of time it is inevitable that the whole mass will be affected.

The chemical change which takes place after the application of water to the dry cement powder is indicated by the following equation:

$$\left.\begin{array}{l} CaO - 3\ Al_2O^3 \\ CaO - 3\ SiO_2 \\ CaO - 2\ Al_2O^3 \\ CaO - 2\ SiO^2 \end{array}\right\} + H_2O$$

The chemically combined water becomes disassociated from this hydrated mixture if the temperature is sufficiently high, after which the concrete loses its crystalline texture and returns substantially to the condition it was before it was originally mixed with water.

It needs no argument, therefore, to prove that whatever invaluable qualities cement possesses for construction purposes it is not and never can be regarded as a fire-resisting material, and that any structure to be fireproof should not rely upon cement or concrete coverings to protect it from great heat.

It should also be borne in mind that in those instances where cement has made a good showing under fire it was because the calcination had not penetrated deeply into the body of the mass, and that subsequent trials would still further reduce the strength of the material. The value of any fireproof material must be judged by its ability to return to its original structural condition after the fire test, and in this respect it cannot be maintained that concrete fulfills this condition.

Endurance of Portland Cement.

IN the process of the manufacture of Portland cement the raw materials are burned to a clinker in the furnace and then finely ground. It has been a frequent assumption of the cement manufacturers that the object of grinding this clinker to an almost impalpable powder was to enable the cement when mixed with water to more intimately coat the particles of sand or rock with which it should be aggregated and to more completely fill the interstices between the grains of the coarser material, but that the presence of a certain proportion of coarsely ground clinker did not necessarily injure the quality of the cement, the unground particles being practically inert. Recent experiments, however, have proven that such is not the case, and that, on the contrary, the coarser particles of cement constitute a menace to the setting of mortar or concrete with which it is mixed which would often account for failures which have been noticed in the material. A number of tests of a most interesting nature in this connection were made some time since at the United States Arsenal at Watertown, Mass., by Mr. J. E. Howard. For the purposes of the tests a quantity of one of the standard brands of American Portland cement was purchased in the open market. The cement was separated by being passed through sieves of varying fineness into four grades, the finest being an almost impalpable powder with the cement grains .0027 inch in diameter or less, while the coarsest grains would be retained by a sieve of fifty to the inch. A number of briquettes were then made, using with one batch varying grades of cement, neat, and in the other briquettes were made of the finest neat cement mixed with granite dust of the same fineness as the coarsest screenings of the cement. These briquettes were all made in the usual manner, set up one day in water, and were tested for tension after six days in the air. The results show that the briquettes made of fine cement and granite dust were much stronger than those made with fine cement mixed with the coarser grade of cement. The fragments were preserved under cover for two years, after which time it was found that the briquettes made with the fine cement and those made with fine cement and granite dust were in a perfect state of preservation, while all the briquettes containing the coarse particles of cement had disintegrated, the briquettes composed of the coarsest grains being entirely disintegrate and the other briquettes varying from a perfect state to one of greater or less disintegration, depending upon the size of the cement grains.

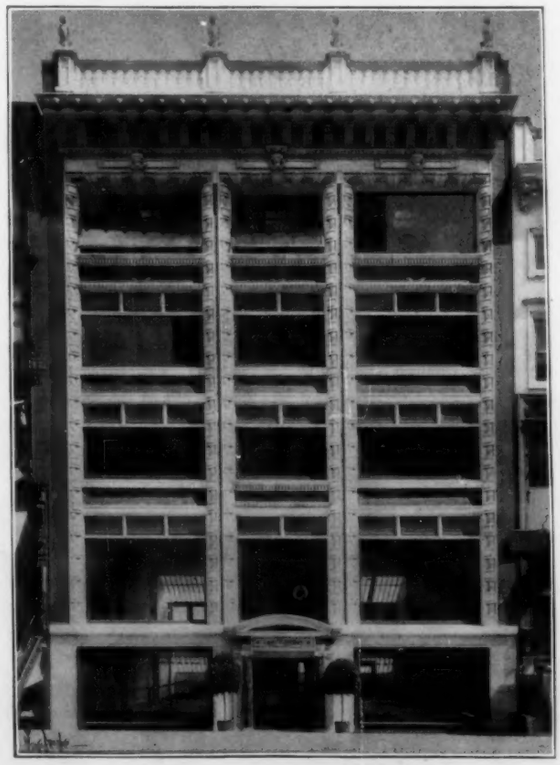
These tests have important bearing upon the subject of concrete construction. They prove that coarsely ground clinker is by no means inert, but that it will hydrate if air has access to it, and that in the process of hydration there is a certain amount of swelling of the particles which will inevitably destroy the coherence of the mass, rendering such construction a menace to the building in which it is employed. In the so-called reinforced concrete systems a degree of reliance is placed upon the concrete far beyond what is expected of it when used for inert resistance, as in foundations or walls. In the latter case we believe concrete to be most excellent in many ways, but we consider it too unreliable in its composition and too easily disturbed by varying factors to make it a proper material for constructive use in connection with steel. The fact of its innate scientific inability to successfully withstand the effect of heat has been demonstrated in many ways, and in this respect we shall have some interesting data of tests to present to our readers in a future number.

Editorial Comment and Selected Miscellany

The Engineer, the Architect and the General Construction Company.

THE article by Reginald Pelham Bolton, C. E., published in *The Engineering Magazine* and which we reprint, will certainly be read with a great deal of interest. Everything that he says emphasizes two rather curious conditions. One is, that, like the manna of old, the rewards of architecture fall upon the fit and unfit alike; and, second, that the general public which employs the architect seems really not to care very much whether the architect is fitted or unfitted for his work.

All of the charges the writer urges against the profession apply in a very large extent to the uneducated, untried, unfit members thereof. They do not in any sense apply to those who stand anywhere near the head of the profession. It is, therefore, not fair to charge the profession as a whole with the faults that are, as a matter of fact, limited to those who, while in the vast majority as to numbers, do not admittedly occupy a high professional position. It is the old difficulty of the specialist being unwilling to subordinate his work to the whole. The engineer thinks no architect can do engineering; the electrician is quite confident that an architect knows nothing of electricity; and as for the average steam engineer, we all know in what contempt he holds his architectural associates. All these specialists quite fail to appreciate that a building is not merely an engineering achievement nor a mechanical appliance, but that all of the practical requirements in the largest modern structure in their aggregate are of relatively minor importance unless subordinated to the architecture which ought to give the building a character. It is not necessary that an architect should be an engineer of any description in order to thoroughly appreciate and control all of the engineering operations connected with his building. Our utilitarian age has greatly magnified the importance of these so-called practical requirements. We would not for a moment lessen an estimate of their real value, and Mr. Bolton's article, in as far as it challenges the practice of architects, who we admit are in the majority in their profession, is timely, well put, and should command full attention, but we do claim for the architectural profession that at its best, and only in that condition should it be measured, it cannot be fairly charged with the deficiencies which this article ascribes to it.



STORE AND LOFT BUILDING, FIFTH AVENUE, NEW YORK.
Bruce Price, Architect.

MANTEL IN LIBRARY, HOUSE OF DR. ALEXANDER GRAHAM BELL, WASHINGTON, D. C.
Totten & Rogers, Architects.

We would echo Mr. Bolton's words, "Every man to his trade," but we claim most emphatically that the work of the architect should and, with the best architects, does cover every department of human industry which goes into the making and the finish of a modern structure. — THE EDITORS.

The architectural profession has not infrequently recognized its responsibility for the results of its professional work, and has advanced in many ways along lines of modern development. But it has curiously failed

to recognize its responsibility in another and more important respect, namely, that of the acceptance of fees in payment for certain technical and artistic work which its members are not qualified by training to execute, and in which they are not expert in the same sense as they are in connection with actual building design. The position occupied by the profession in this regard is not logical, and has brought about a very disastrous state of affairs as regards their employment in the largest building enterprises.

As the logical reason for the employment of professional ability in the design of a building, in place of the employment of contractors or builders for the purpose, it is maintained by the profession that their members are a trained body, expert in the design and proper construction of the work they undertake to plan, uninfluenced by the considerations which affect the contractor or builder, and capable of giving economical and independent advice to their clients.

The client, it therefore follows, in employing an architect, engages and pays for a personal ability and technical knowledge of the subjects under consideration and is entitled to a receipt of that personal capability and technical information in each branch dealt with.

If, therefore, the architect does not possess expert knowledge on any one branch of his undertaking — and no one can expect that any one of that wide profession should be so fully informed — he is under moral obligation to supplement his own deficiency in respect of any particular item involved — such as, say, sculpture, modeling, decorative effects, landscape gardening, sanitation, boiler practice, chimney design, electrical equipment, heating, ventilating, hydrostatic, elevator, foundation, steel construction, or other modern requirements — by the equivalent expert and equally independent knowledge of others; otherwise he is not giving his client value for his engagements.

In other words, architects are paid for professional knowledge and experience upon all parts of the work they undertake, and cannot honestly accept pay for their services as amateur sculptors, artists, engineers, plumbers, and for amateur opinions upon technical subjects. Yet too many of them

MASSACHUSETTS AUTOMOBILE CLUB BUILDING, BOSTON, MASS. William G. Rantoul, Architect.

OFFICE BUILDING FOR PENNSYLVANIA STEEL COMPANY, STEELTON, PA.
York & Sawyer, Architects.

A MANUFACTURING BUILDING, CHICAGO.
Pond & Pond, Architects.

not only do so, but still adhere to the old practice of obtaining information, guidance, proportions, even their plans and specifications, from contractors and prospective bidders.

As regards engineering work, there are a few architects who by reason of a certain amount of habitude, possibly in some cases of a certain amount of training, possess a familiarity with some sanitary and engineering matters. But would they, if deprived of their architectural practice, undertake with that amount of knowledge to enter upon independent practice as experts in those lines?

In other words, will any architect assert himself to be as fully qualified in these matters as he professes to be, and is, in building design and construction?

Recognizing the necessity of doing something, but desirous of avoiding the cost of employment of ability of a character and cost equal to their own, a number of architects have proceeded to a course which has proved peculiarly adverse to the interests and credit of the profession. They hire inadequate and often inexperienced help in the shape of assistants or draughtsmen, and put them forward as their substitute for technically trained expert assistance. One of the foremost firms of architects in the United States have in their employment, and put forward as their "consulting engineer," a very worthy, and in his own line deserving, man whom they took out of an engine room. There are several others who pay their "consulting engineers" in their office from $20 to $30 per week, and permit this class of experience to pass upon and decide the important operating expenses of their clients. Such men are not only incompetent in the direction of knowledge, experience or ability, but an injury is inflicted upon the client which often reflects back upon the architects by placing such a class of men in control of matters where large sums of money and many competing and unscrupulous interests are engaged.

The very essence of the employment of professional men is that their "standing" shall protect the employer from corruption and undue influence; and in passing over any part of their engagement to a lower class of employed and often underpaid labor, the architects very seriously compromise their employer's interests. Even when an independent engineer is employed he is often made to feel that he is only the agent of the architect or is placed under obligations to make his designs coincide with the architect's views. The results are to be seen in many otherwise well-considered installations.

There are eight hundred and fifty practising architects in New York, and there are seventeen independent consulting engineers employed on such cognatic work, where there should be plenty of inducements and work for ten times the number. The architectural profession have had this matter drawn to their attention by several engineering societies, and have not only failed to correct their false position, but have embodied it in the provisions of their form of professional contract. As their self-sufficiency evidently renders them deaf to the calls of plain dealing, it is necessary to direct the attention of those who employ them to the matter, so that the existing system may perhaps be remedied from without. I shall not lay myself open to any charge of one-sidedness, but freely admit that there are some engineers posing as architects to whom the same consideration can be inversely addressed. But it is to the general credit of my profession that they are an extremely limited number.

It is in connection especially with steam apparatus that this matter assumes peculiar proportions, for in this the owner's pocket is particularly and permanently as-

SMALL STORE AND OFFICE BUILDING, BOSTON.
Peters & Rice, Architects.

sailed. If a few personally conducted parties of steam users could be taken through some of the most modern firerooms in New York they would certainly be convinced of the desirability of employing engineers on engineering work. A trip up Broadway would reveal boilers in dark and stifling sidewalk vaults which are a menace to public security, since boilers so placed cannot be properly maintained in security; boilers far away from the chimney, necessitating horizontal smoke connections, in one case 225 feet long; boilers, as in one well-known and widely illustrated building, so badly placed and connected that when steam is raised in one the expansion pulls the piping off the other, or, as in one of the largest insurance buildings, placed in the same room as the machinery, with space for only one day's fuel. Such instances could be multiplied.

DETAIL BY BEEZER BROS., ARCHITECTS.
Northwestern Terra-Cotta Co., Makers.

Owners are of course largely to blame. But they do not realize what the position is. The mechanical plant in a large office building is worth from $60,000 to $150,000. On this an architect commonly receives his commission of two and one-half or five per cent, or from $1,500 to as much as $7,500. His outlay in respect of its design is frequently nothing, the whole being obtained from contractors.

The steel structure may be competed for by more than one firm of contractors, but each maintains its own drawing office, sometimes employing as many as one hundred to one hundred and fifty draughtsmen, the cost of which labor is added to the price; and thus the planning of this part of the work is frequently paid for by the owner of the building twice over.

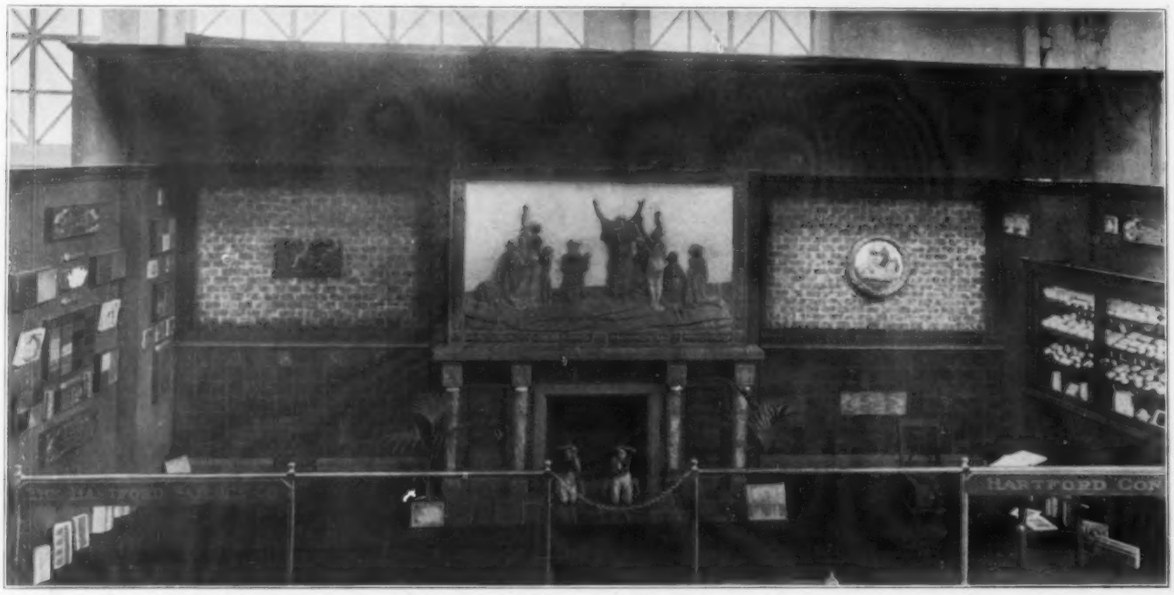


EXHIBIT OF THE HARTFORD FAIENCE COMPANY AT ST. LOUIS.

The Building-Construction Company. — The unsatisfactory conditions of service, as offered by the majority of the architectural profession, have led to the introduction of a recent development of the pretensions of the builder to the possession of the facilities of the architect, and for this development, directly hostile as it is to their own pretensions, the architectural profession have themselves, in their persistence in the foregoing practices, entirely to blame. I state this fact from personal knowledge of the reasons which induced the intro-

M. E. CHURCH, GREENFIELD, OHIO.
Brown & Davis, Architects. Roofed with American "S" Tile.

duction in New York of the present system of general construction, the foregoing conduct of the architectural profession having been given to me as the cause by two of the leading concerns against whom the architects of New York are now loudest in their denunciations.

By dint of liberal assertion, of active exertion on the part of young and alert employees, and of constant iteration of architectural shortcomings, the construction companies have plucked the ripest plums from the building orchard. They have calmly adopted the plans of architects, without credit or thanks, have walked off with their clients, belittled their abilities, thrown doubt on their capacity, sneered at their rectitude and cold-shouldered their approaches to any understanding.

THE NEW ASTOR HOTEL, NEW YORK, N. Y. Clinton & Russell, Architects.
Built of Sayre & Fisher Co. repressed red brick, laid Flemish bond.

Their particular facility is that they, for a covering figure, can carry out all achitectural detail and engineering work without cost and with their own trained staff. This would be an excellent idea, if the staff were of that character; but in point of fact, they have not yet grasped the fact that it would pay them to employ the highest class of professional ability; and, therefore, the men employed by them in the work of design are often either small contractors, or are assistants of the same order as those to whom I have referred as being employed by some of the architectural profession. If the scope of these powerful concerns should eventually fully cover the field of building operations, the profession of architecture would be very completely visited for its shortcomings, since the avowed idea of the construction company is to allow the architects no more than the opportunity of producing general designs to be by them detailed and developed; but so far, owing to the very similar class of intelligence applied to their work of detail design, the result has often been poor architecture and more often still poorer engineering.

In respect of the latter, I regret to say that since the operations of these construction companies began no advance whatever has been made in the improvement of the interior engineering of the buildings they have handled. In point of fact, their practice at present is the installation of poorer designs of mechanical equipment than were generally discredited before their meth-

ods obtained an ascendency in modern building operations.

It is but a natural result of such a system that this should be the case. A general contract for a great building is made on a condition which is the essential feature and object of the employment of a general contractor. It is that a building of a certain character, often identified only by a mere sketch or outline, or even by a

WABASH DEPOT, PITTSBURG, PA. T. C. Link, Architect.
Built of Kittanning repressed gray brick and Atlantic terra-cotta.
Fireproofed by National Fireproofing Company.

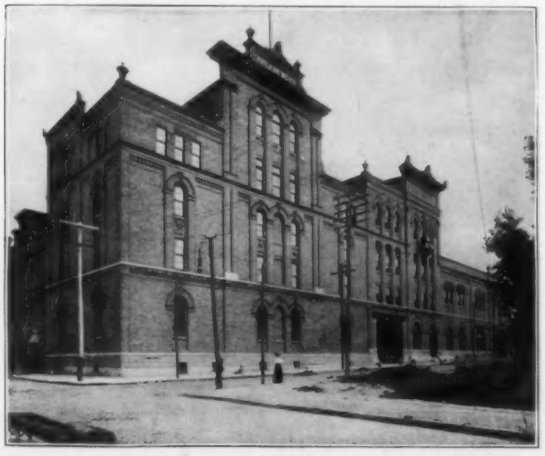
partial reference to some existing building of a more or less similar type, shall be erected within a certain period for a certain sum, without any extra charges. Any attempt to introduce any detail of conveniences, of desirable materials, or of particular requirements, is met and combated by the objection that the builder must have a free hand in selection or in dealing with competing manufacturers; otherwise the cost will be increased, or the time limit will be exceeded, or labor trouble may ensue. So the owner signs away his money and gets in return a complete structure, it is true, such as his picture showed, which is, however, built of the material, equipped with the class of apparatus, proportioned to the extent

DETAIL EXECUTED BY ST. LOUIS TERRA-COTTA COMPANY.

of liberality, and constructed by the class of labor which have best suited the policy or profit of the contractor. If by the inducement of the needs of this building a gain can be made in another; if by the sacrifice of a detail in one an extra can be avoided in another; if by diverting proper labor from one, less competent or cheaper labor can be utilized in another,—then these policies are open to adoption, are liable to be adopted, and are and have been in many cases adopted.

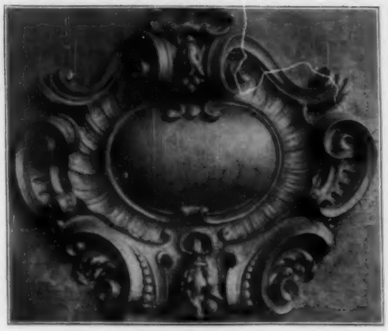
DETAIL BY A. P. CLARK, JR., ARCHITECT.
Excelsior Terra-Cotta Company, Makers.

As to the designing work produced under this system, it is inferior and is done by inferior help, whose efforts are subordinated to the one predominating consideration of avoiding all avoidable cost, while at the same time evading the much abused "extra," which in this class of contract, coming directly on the construction company, is of course to be avoided at all cost of sacrifice of efficiency. I will give an instance of an actual occurrence:



BREWERY, PHILADELPHIA, PA. O. C. Wolf, Architect.
Built of Ironclay Brick, O. W. Ketcham, Agent.

In the construction of one such building it was discovered that by a blunder in reading, or more likely by an error in estimating, no provision had been made for the cost of carrying the decorative "effects" of the two outer sides of the building round its interior sides, which were exposed by the ownership of the abutting property. The difficulty was overcome by directing the engineer to cut down the equipment to a sufficient extent to pay for the deficiency.



DETAIL EXECUTED BY NEW JERSEY TERRA-COTTA COMPANY.

The proper equipment was, therefore, cut from two boilers of ample capacity and one spare, to two boilers which, when forced, can just do the work; two generators which unitedly will barely carry 5/10 of the total lighting load, and 6/10 only by overload; the omission of every possible convenience and cross-connection; the reduction of the plumbing and character of the fixtures; and the skinning of the heating arrangements down to the cheapest system. The owners have the satisfaction of knowing that their building is carried out "without extra," and has cornices of the anticipated appearance. But they do not know that they have not only paid an extra in full for the work, but also are paying an extravagant and permanent interest on the achievement in their coal, repair and labor bills.

The Owner of Property. — I could multiply these instances, but I do not know if there is any good in attempting to draw beneficial lessons for the education of an educated class which is, withal, too careless or incapable to take elementary precautions as to its own rights and property. One would suppose that a most limited intelligence would enable a property owner to perceive that he is not likely to get something for nothing out of a smart firm of general contractors.

STAR BUILDING, ST. LOUIS, MO.

Barnett, Haynes & Barnett and Ernest Helfensteller, Associate Architects.
Built of cream shade of enamel brick made by Hydraulic-Press Brick Company. Terra-cotta trimmings by Winkle Terra-Cotta Company.

APARTMENT HOTEL, NEW YORK CITY.

H. B. Mulliken, Architect.
Front brick furnished by Robt. C. Martin & Son. Terra-cotta by New York Architectural Terra-Cotta Company.

As regards the features of engineering character in their buildings, it might naturally be assumed that men of business capacity and of ordinary intelligence would, in a matter in which they are directly and permanently liable for the cost of results, very closely examine into the conditions surrounding their future outgoings with the aid of the best technical knowledge available. But that is rarely the case. Such people, when contemplating the construction of a building, are captivated by the ideas of outside design and interior decoration, and are under those influences to such an extent that the hard and mechanical details of

DETAIL BY MAURAN, RUSSELL & GARDEN, ARCHITECTS.

American Terra-Cotta and Ceramic Co., Makers.

engineering operations are uninteresting to them. They are also very frequently dependent in all such matters on some mechanic in their employment, such as the operating engineer or fireman in their own home or other property. These men, when put forward (as they very frequently are) to discuss or suggest or even to proportion necessary apparatus in a new building, do so with the natural subserviency of their class and come under the architect's or contractor's dominance, their employment in this manner often resulting in worse blunders than would have been the case without their limited ideas and their liability to accept all kinds of assertions on the part of manufacturers.

Not until it is much more widely understood that the mechanical apparatus in a building is the part of it that directly affects the pocket of the owner, that in it and by it he is constantly being defrauded and fleeced, will the present state of affairs be amended.

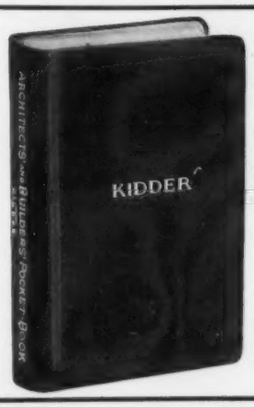
I have recently had the opportunity of laying these views before one of the great mortgage-insurance companies, whose action will in future take into account the imperfections and deficiencies of mechanical apparatus in the building in which they take an interest. It may be that others will awake to this, to them, important element, and that through their action careless ownership will be aroused.

Having sat for ten years past between these elements, and having had the good fortune not to fall into the evil graces of either, I am in hopes that my plain speaking will be taken in good part and that all parties will proceed to set their courses with a little more regard for their true interests in this age of engineering detail. And I am thankful to record my knowledge that there are architects who fully live up to their undertakings in the respects I have named, as there are builders who are conscientious, and as there are owners who are capable of appreciating the value of the old saw — "Every man to his trade."

IN GENERAL.

Mr. Robert D. Kohn was associated with Messrs. Carrère & Hastings as architects for the Ethical Culture Society Building illustrated in THE BRICKBUILDER for September.

George A. Ross and David H. MacFarlane have formed a partnership for the practice of architecture under the firm name of Ross & MacFarlane, Bank of Ottawa Building, Montreal. They will be pleased to receive samples and catalogues.



Now Ready...

The Fourteenth Edition of

Kidder's Architects' and Builders' Pocket-Book

Twentieth Thousand.
16mo, xix + 1656 pages, 1000 figures.
Morocco, $5.00.

JOHN WILEY & SONS
43 and 45 East 19th St., New York City

.. Competition for a Village Church ..

First Prize, $500 Second Prize, $200 Third Prize, $100

PROGRAMME

THE problem is an Episcopal Church in a large village. The location may be assumed in any portion of the United States. The lot is 80 feet wide on the west and 180 feet deep on the south. It is on a corner of two streets of equal importance. To the southwest a main avenue communicates with the principal square of the village, the grade of this street down to the square being 7 per cent. The lot itself is perfectly level and is in the residential portion of the village. The problem considers only a church with sacristies for clergy, choir and altar guild. At some future time the property immediately adjoining to the north is to be acquired, and on this property will be erected a parish house and rectory. The church will, therefore, be placed and designed with this future extension in view.

The church is to seat five hundred, the choir thirty. A small side chapel is optional.

The following points must be considered in the design:

A. Frank and logical expression of the prescribed material.

B. Historical and traditional associations of the institution for which the structure is provided.

C. Historical and architectural antecedents, associations and surroundings of the assumed location.

Drawings required:

A plan at a scale of 16 feet to the inch, a front elevation and a side elevation at a scale of 8 feet to the inch, all on one sheet, and a sheet of details at a scale of one-half inch to the foot. The size of each sheet shall be exactly 20 inches by 30 inches. The sheets are not to be mounted. All drawings are to be in black ink, without wash or color, except that the walls on the plan are to be blacked in.

The exterior of the building is to be designed entirely in terra-cotta, and the same material may be used at will in the interior. Colored terra-cotta, or faience, may be employed.

It must be borne in mind that one of the chief objects of this competition is to encourage the study of the use of architectural terra-cotta. There is no limitation of cost, but the designs must be suitable for the location, for the character of the building, and for the material in which it is to be executed. The details should indicate in a general manner the jointing of the terra-cotta and the sizes of the blocks.

In awarding the prizes, the intelligence shown in the constructive use of terra-cotta and the development or modification of style, by reason of the material, will be taken largely into consideration.

Every set of drawings is to be signed by a nom de plume or device, and accompanying same is to be a sealed envelope with the nom de plume on the exterior and containing the true name and address of the contestant.

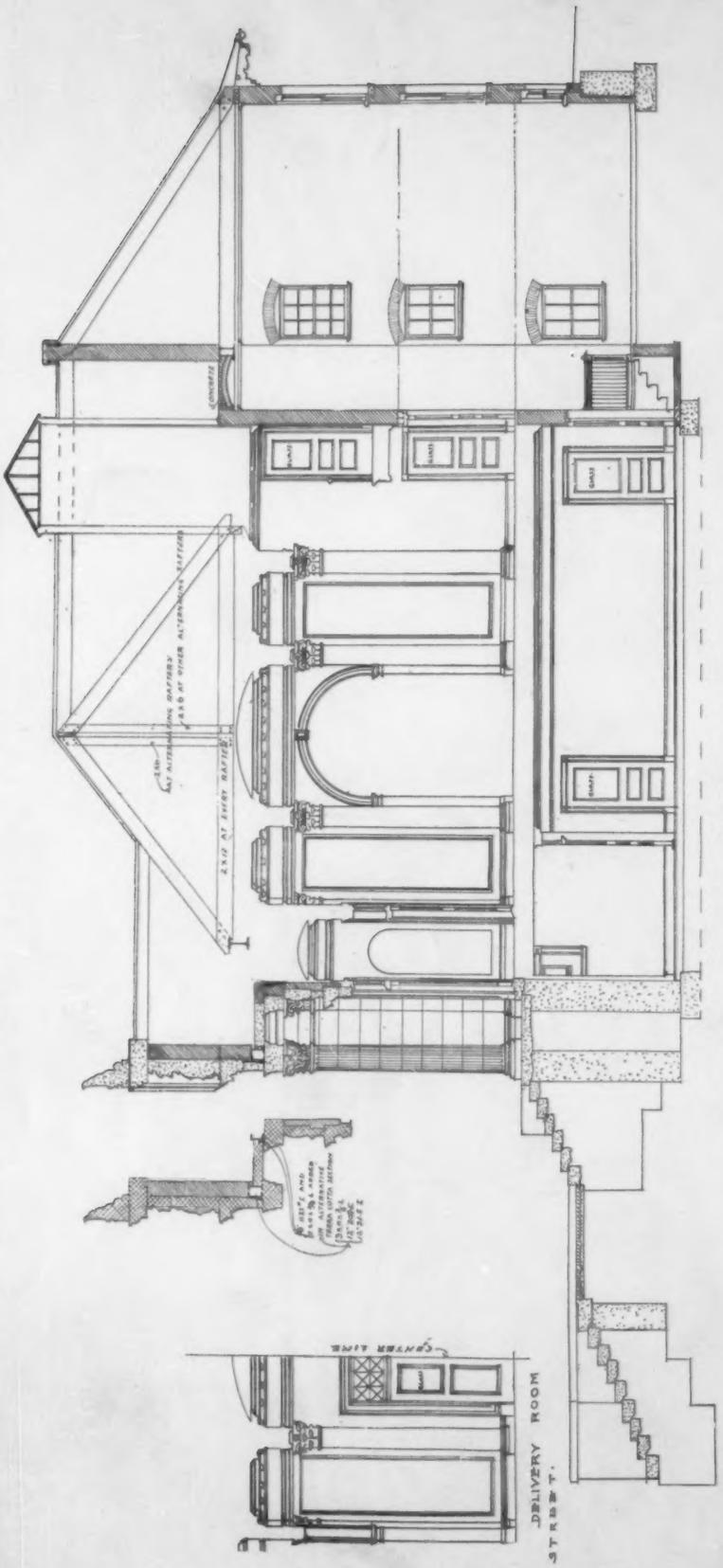
The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before December 15, 1904.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

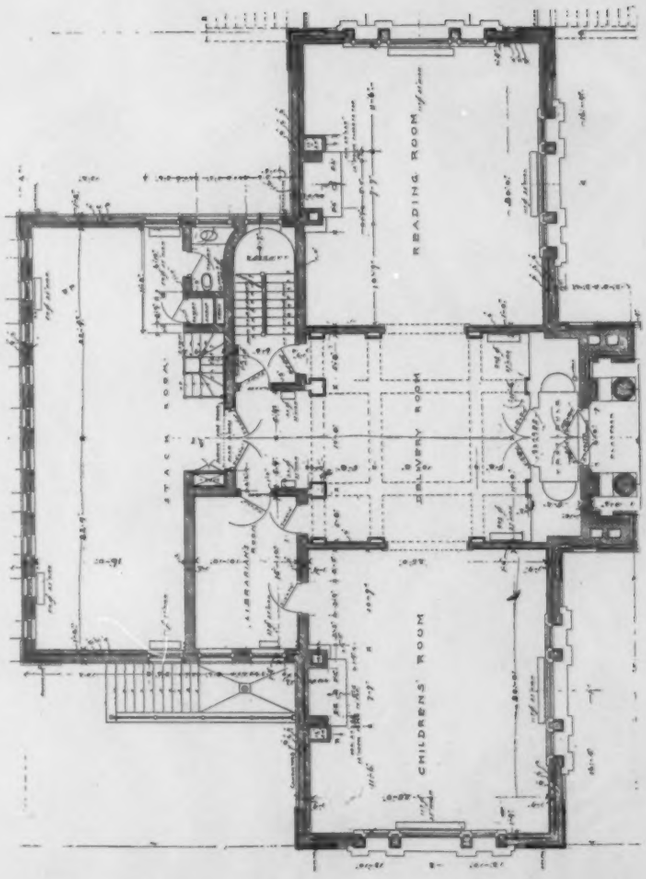
The designs will be judged by three well-known members of the architectural profession.

For the design placed first in this competition there will be given a prize of $500.
For the design placed second a prize of $200.
For the design placed third a prize of $100.

We are enabled to offer prizes of the above mentioned amounts largely through the liberality of the terra-cotta manufacturers who are represented in the advertising columns of THE BRICKBUILDER. This competition is open to every one.

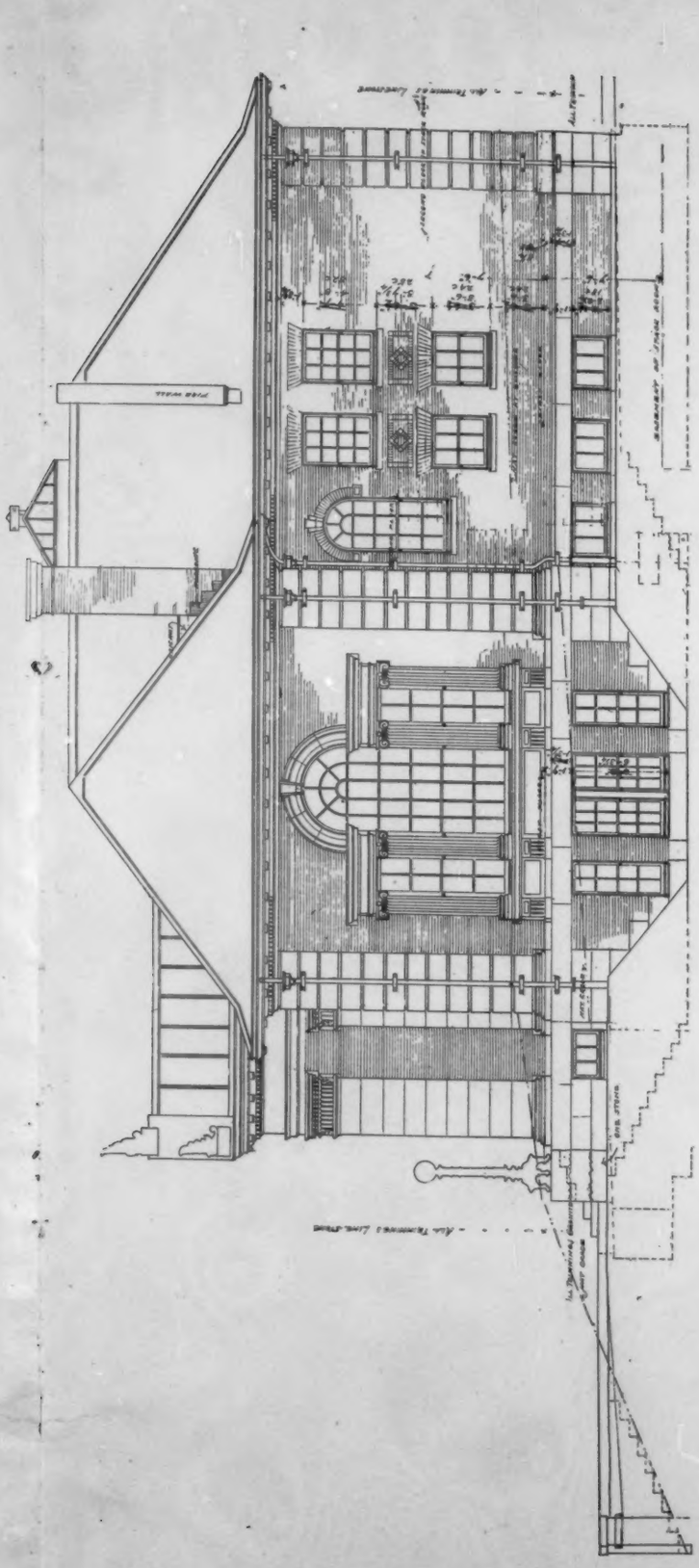


SECTION.

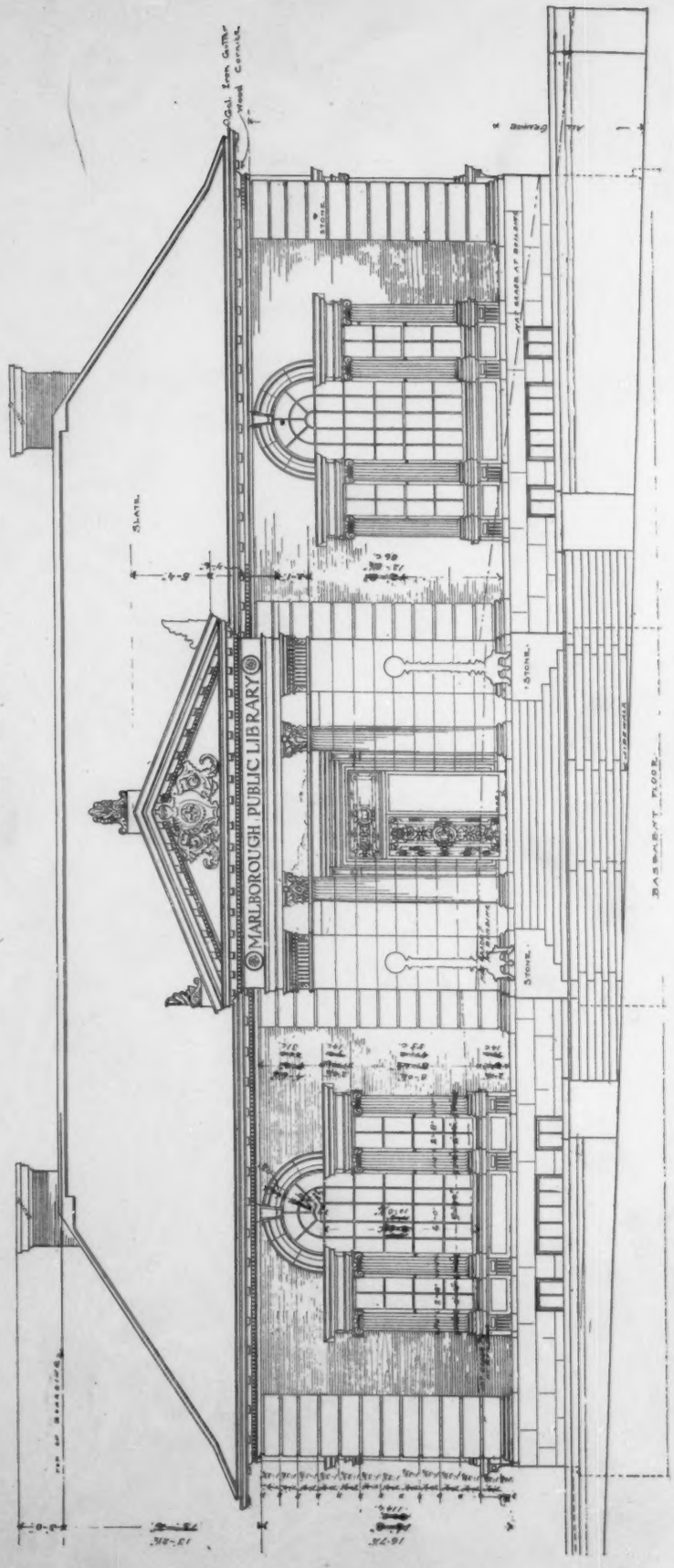


FIRST FLOOR PLAN.

PLATES 73 and 74.



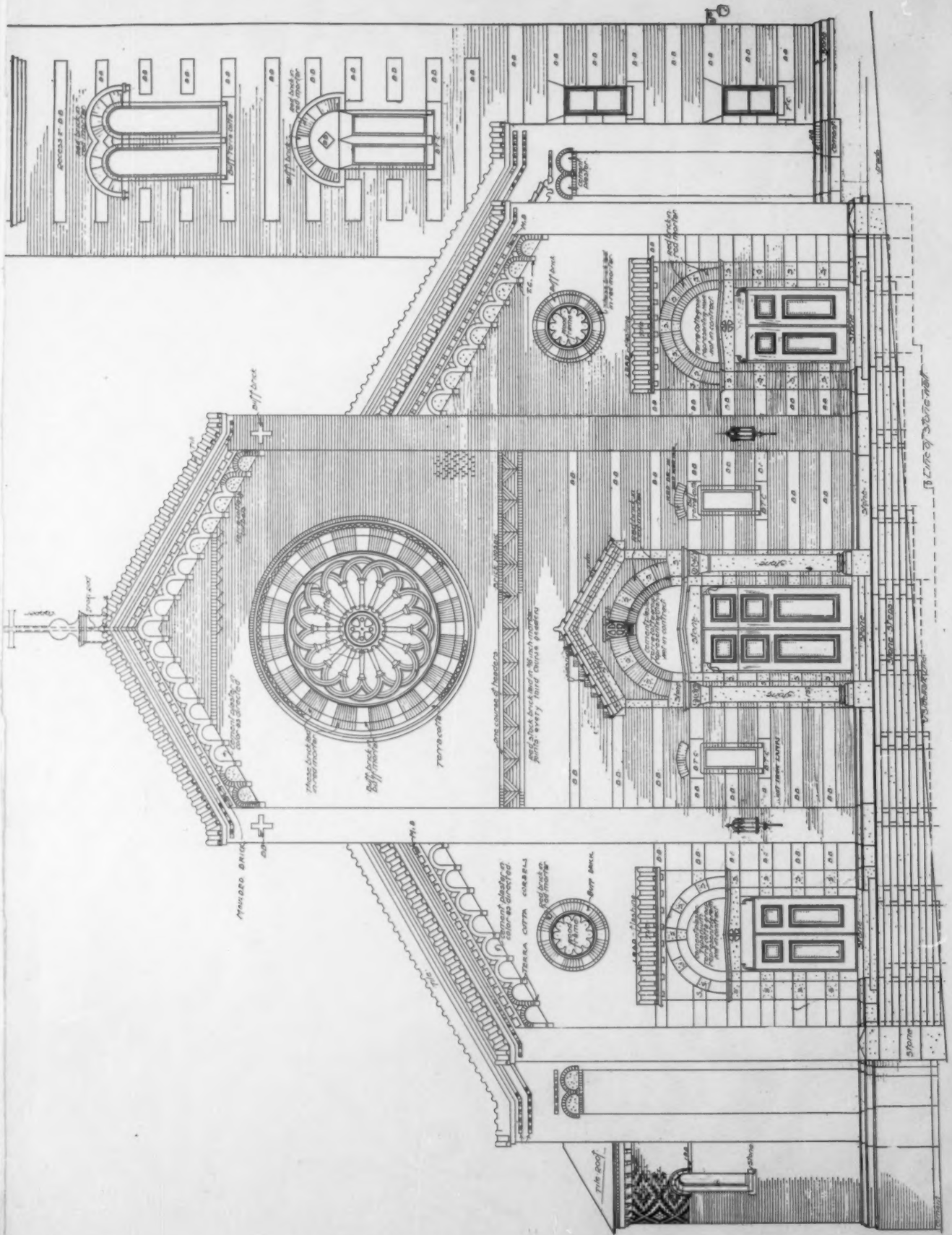
SIDE ELEVATION.

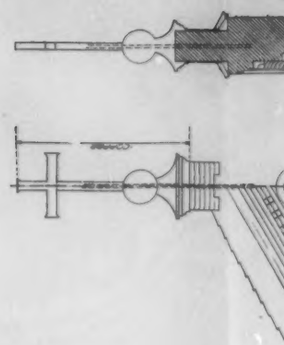


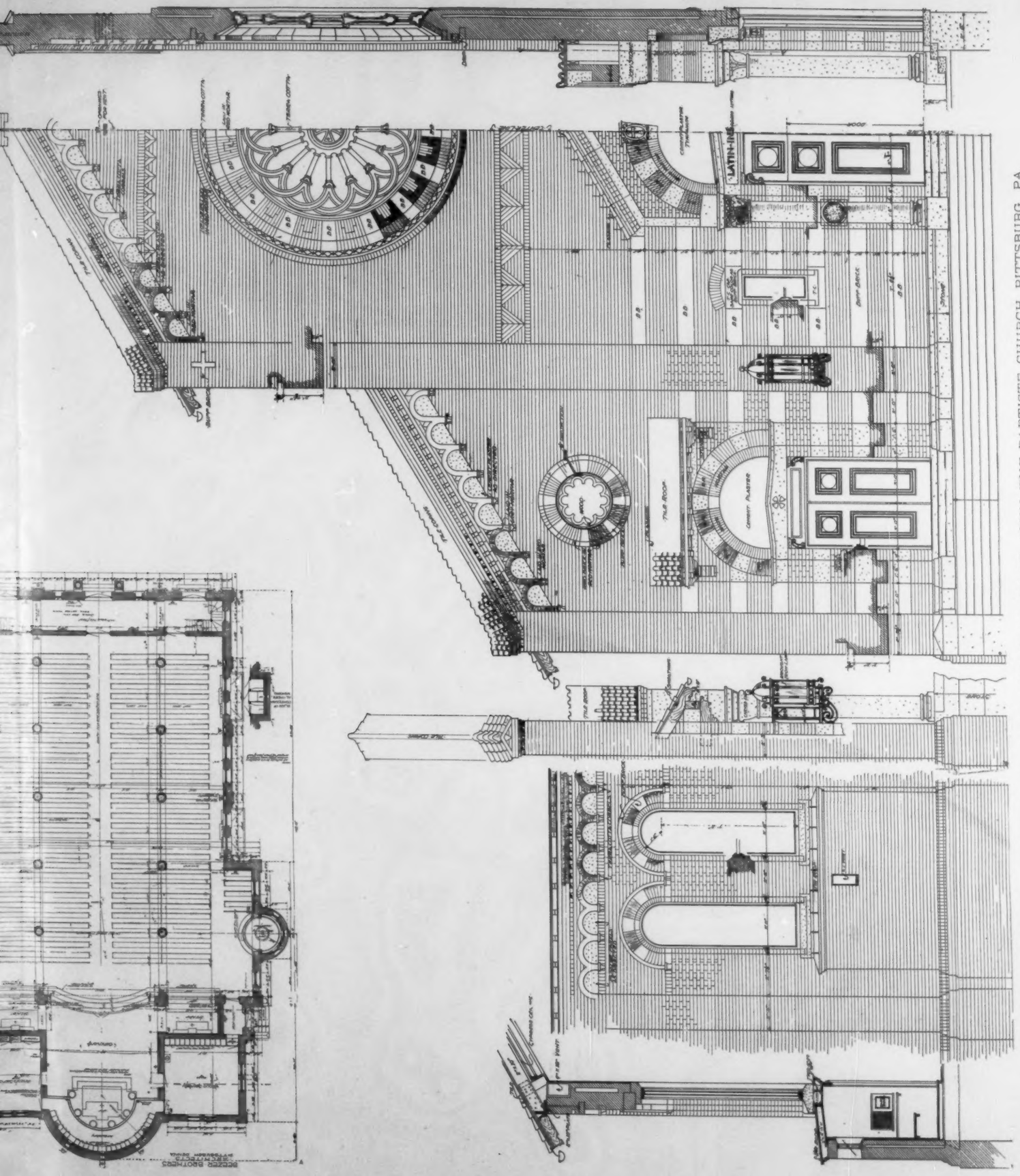
FRONT ELEVATION.

PUBLIC LIBRARY, MARLBORO, MASS. PEABODY & STEARNS, ARCHITECTS.

UNIV OF MICH


Buff brick
Red brick
Terra cotta
Stone
Slate roof
Tile roof

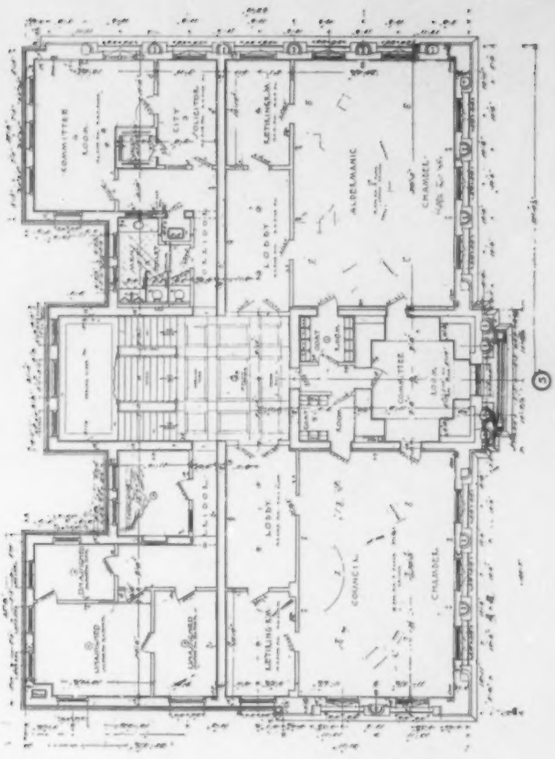


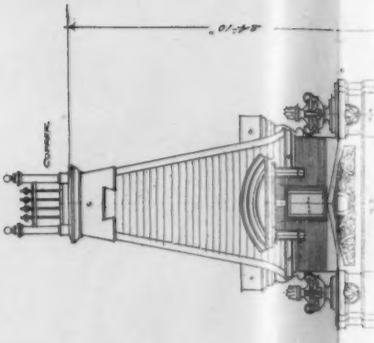


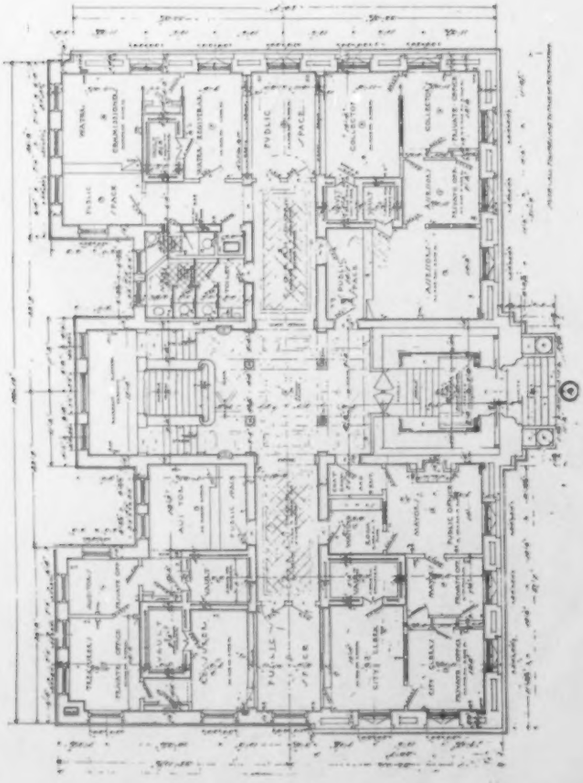
FRONT ELEVATION, DETAIL OF SAME, AND PLAN OF ST. JOHN THE BAPTISTE CHURCH, PITTSBURG, PA.

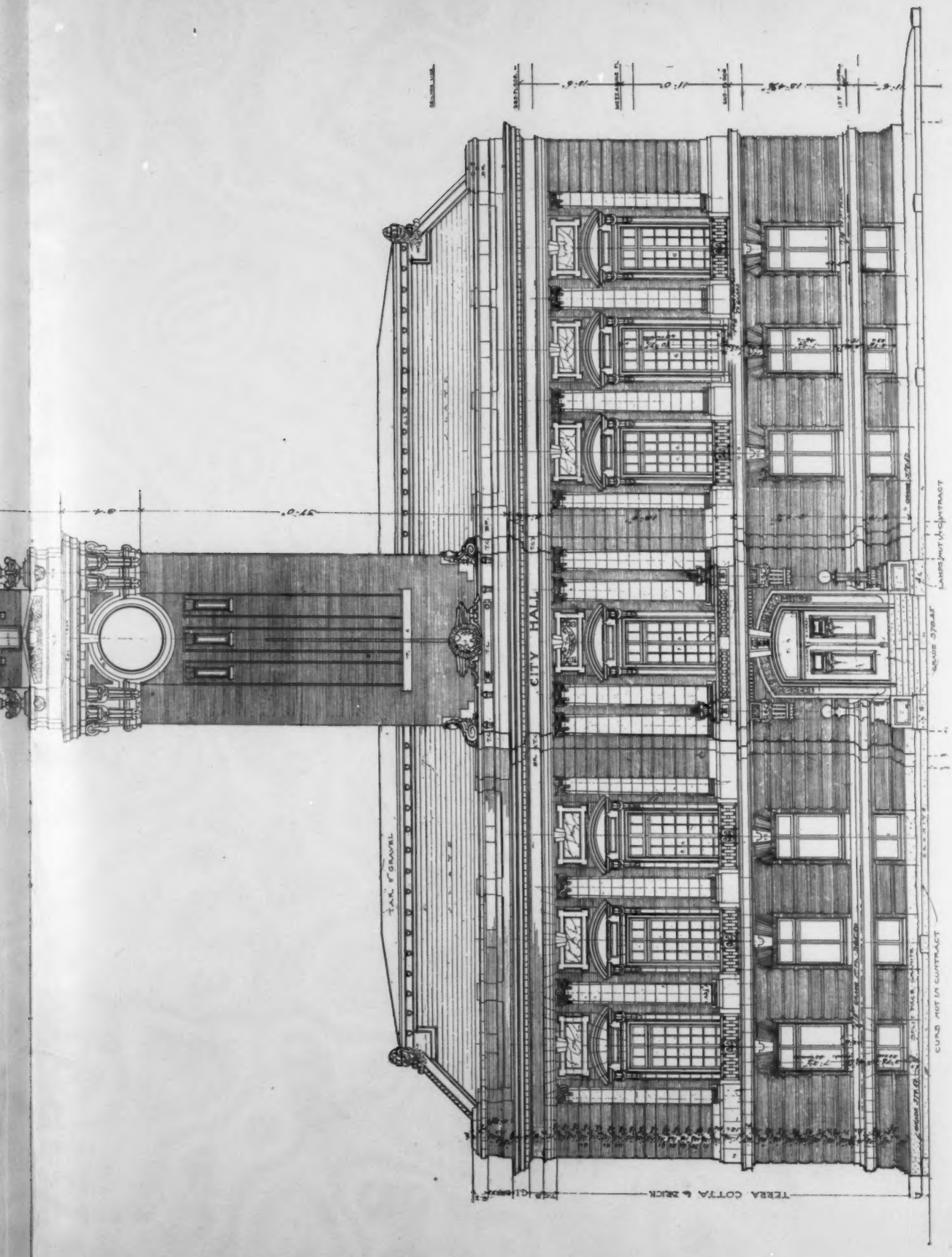
BEEZER BROTHERS, ARCHITECTS.

UNIV. OF MICH.


SECOND FLOOR PLAN.

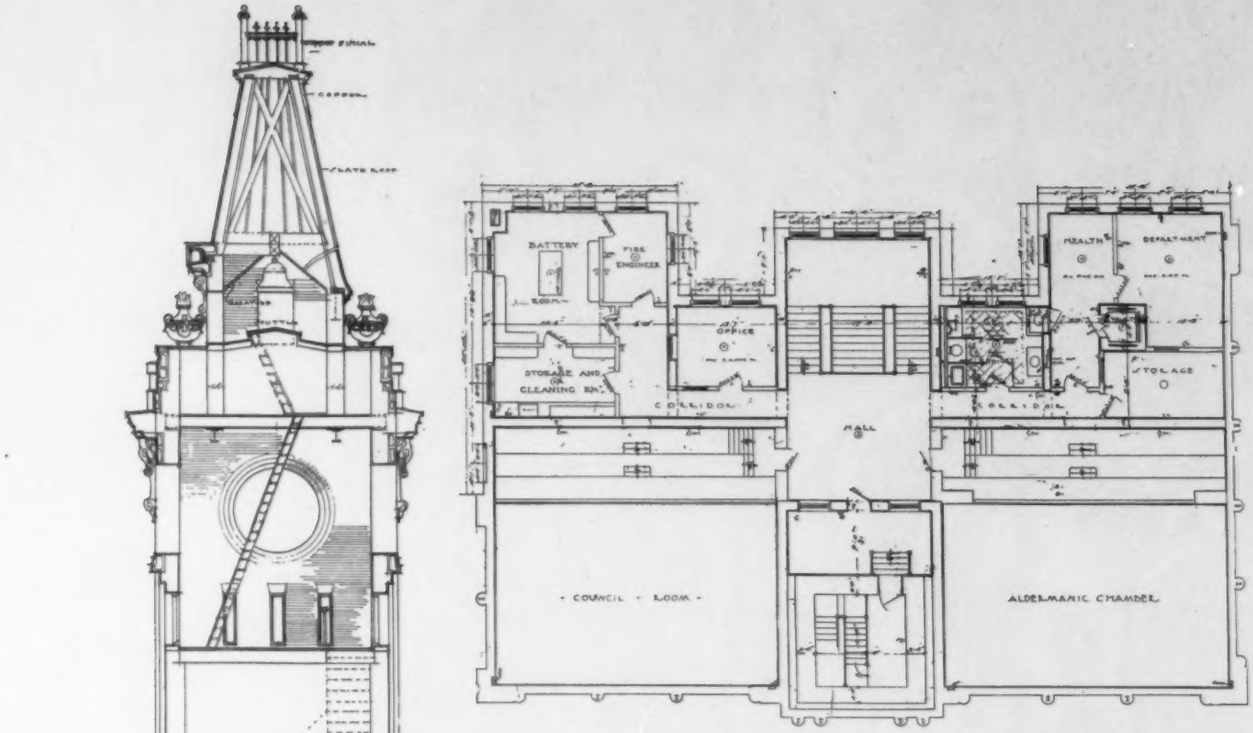



FIRST FLOOR PLAN.

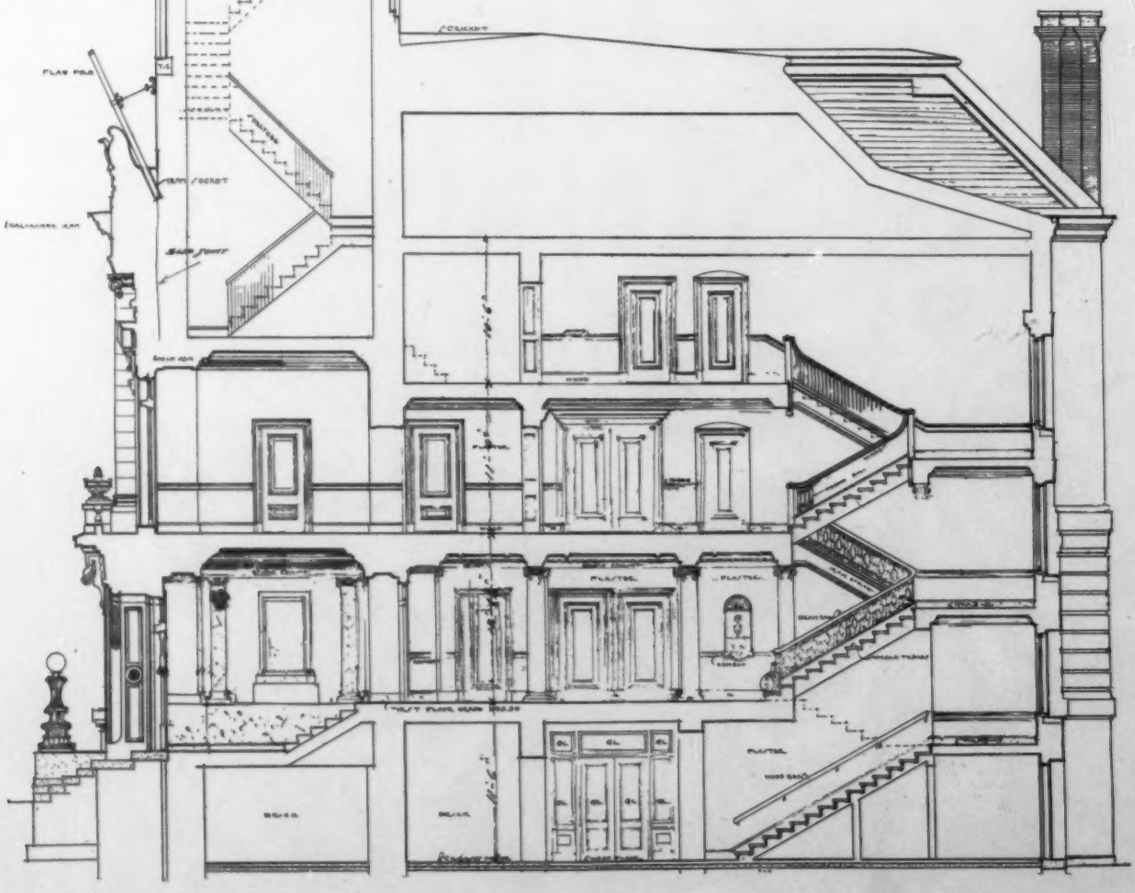


FRONT ELEVATION.

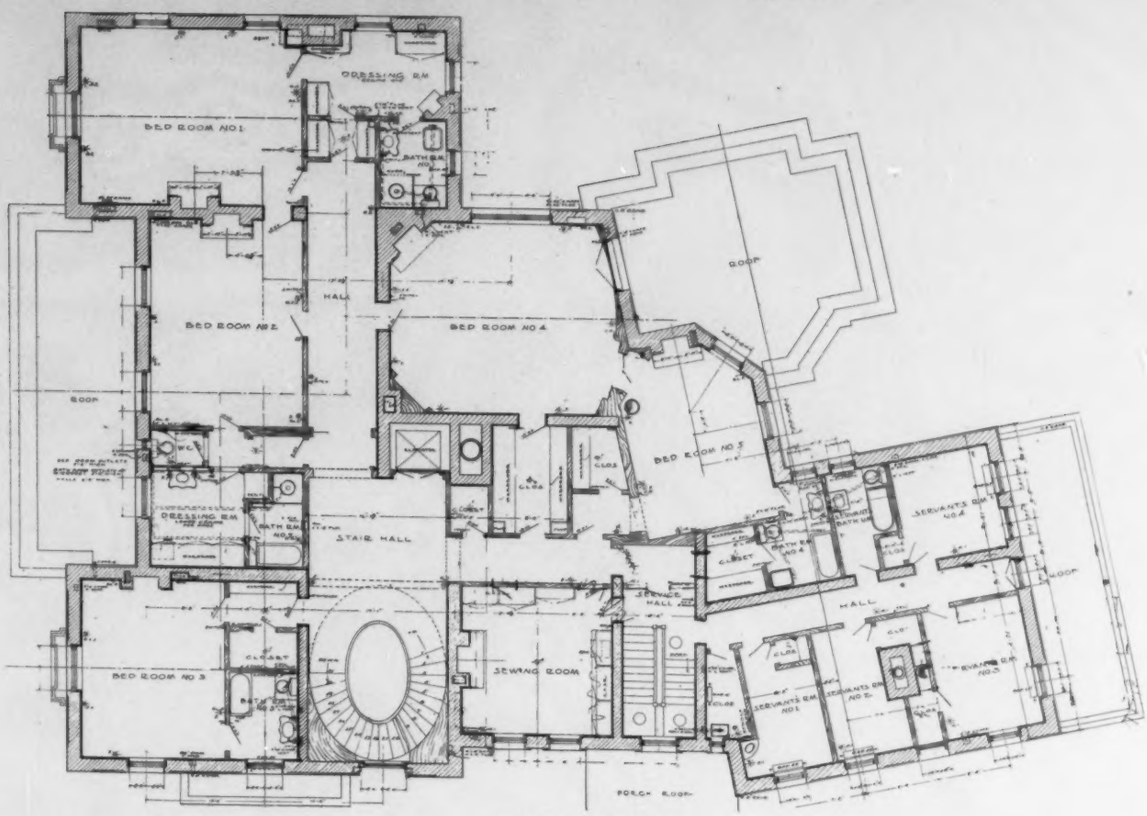
CITY HALL, MARLBORO, MASS. ALLEN & COLLINS AND J. LAWRENCE BERRY, ASSOCIATE ARCHITECTS.



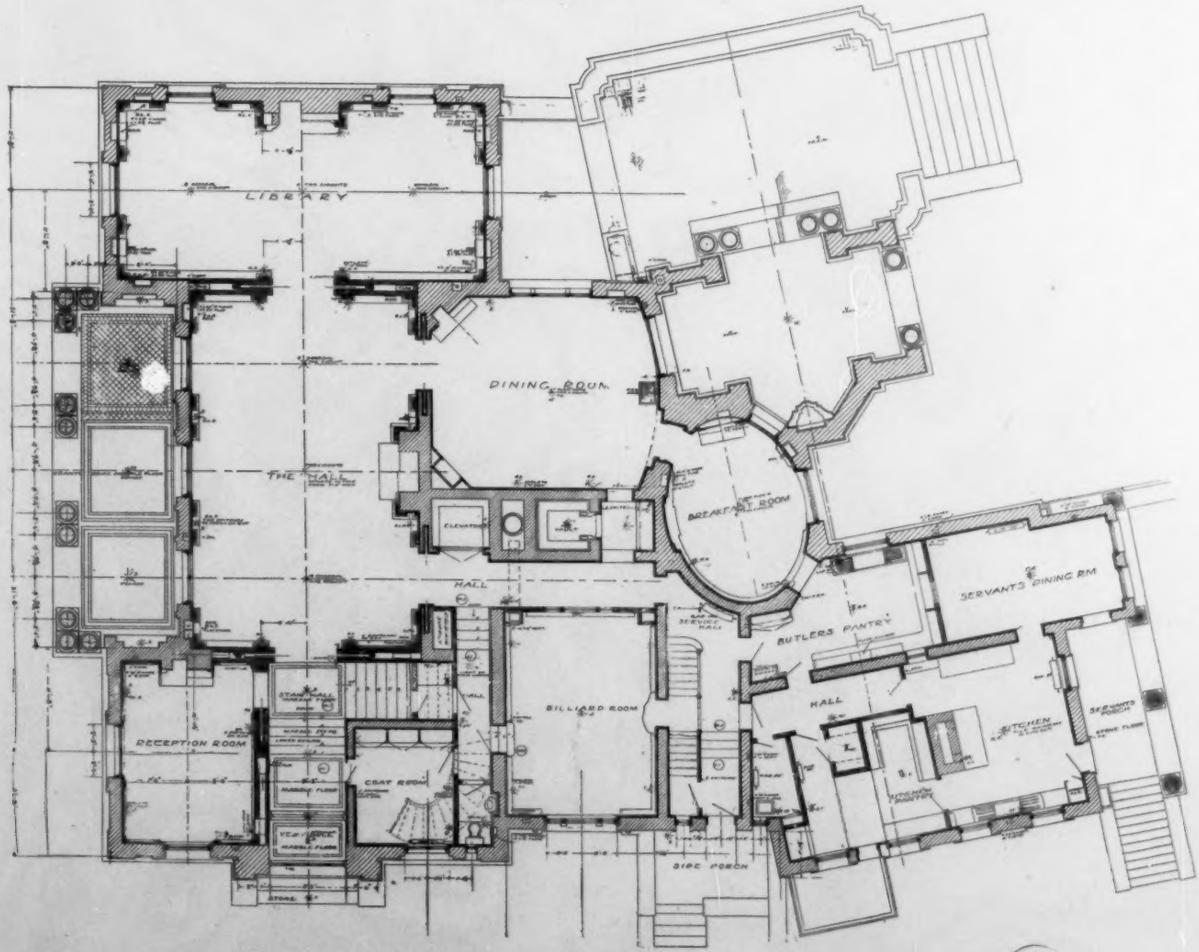
MEZZANINE FLOOR PLAN.



SECTION, CITY HALL, MARLBORO, MASS.



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

HOUSE AT BUFFALO, N. Y. GREEN & WICKS, ARCHITECTS.

UNIV OF MICH

80 a

ST. JOHN THE BAPTISTE CHURCH, PITTSBURG, PA.

BEEZER BROS., ARCHITECTS.

UNIV. OF MICH.

806

STREET FRONT

DETAIL OF ENTRANCE.

HOUSE AT BUFFALO, N. Y.

GREEN & WICKS, ARCHITECTS.

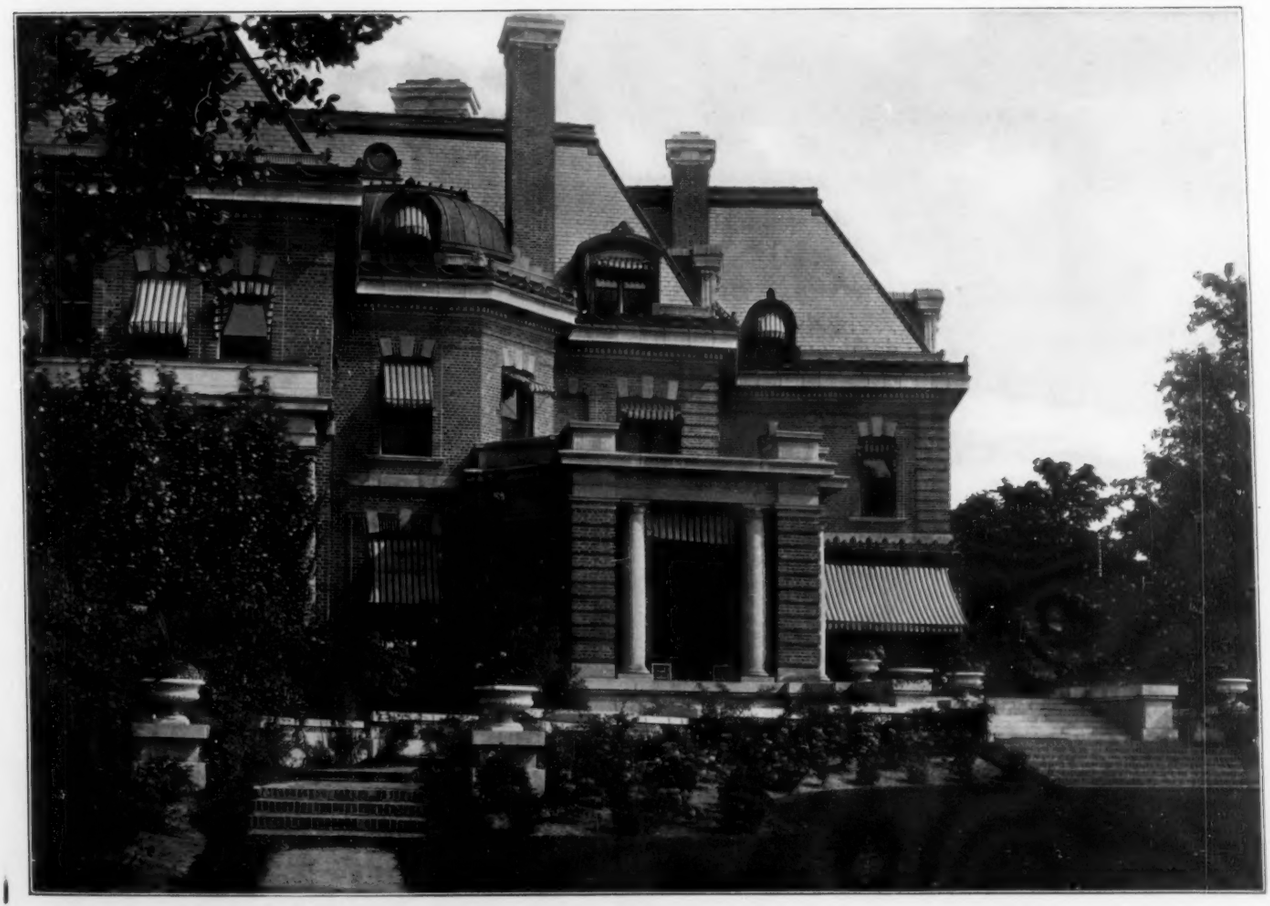
UNIV OF MICH

ST. JOHN THE BAPTISTE CHURCH, PITTSBURG, PA.

BEEZER BROS., ARCHITECTS.

UNIV. OF MICH.

GARDEN FRONT.



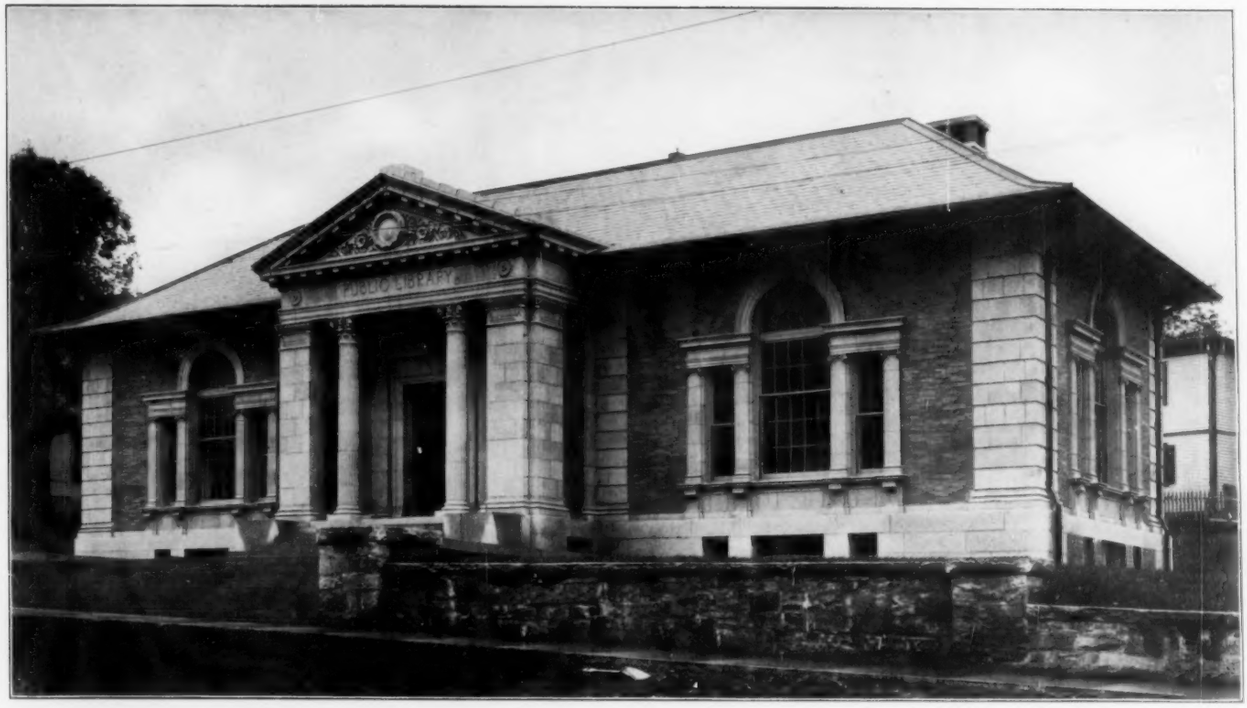
DETAIL OF GARDEN FRONT.

HOUSE AT BUFFALO, N. Y.

GREEN & WICKS, ARCHITECTS.

UNIV OF MICH

80e



PUBLIC LIBRARY, MARLBORO, MASS.

PEABODY & STEARNS, ARCHITECTS.

UNIV. OF MICH.

ORNITHOLOGICAL MUSEUM FOR JOHN E. THAYER, ESQ., SOUTH LANCASTER, MASS.

WINSLOW & BIGELOW ARCHITECTS.

UNIV. OF MICH.